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pt. 68

PATENTS FOR INVENTIONS.

ABRIDGMENTS
OF
Specifications
RELATING TO
WEARING APPAREL.

DIVISION IV.
DRESS FASTENINGS AND JEWELLERY.

A.D. 1631-1866.

PRINTED BY ORDER OF THE COMMISSIONERS OF PATENTS.

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PREFACE.

The Indexes to Patents are now so numerous and costly as to render their purchase inconvenient to a large number of inventors and others, to whom they have become indispensable.

To obviate this difficulty, short abstracts or abridgments of the Specifications of Patents under each head of Invention have been prepared for publication separately, and so arranged as to form at once a Chronological, Alphabetical, Subject-matter, and Reference Index to the class to which they relate. As these publications do not supersede the necessity for consulting the Specifications, the prices at which the printed copies of the latter are sold have been added.

The number of Specifications from the earliest period to the end of the year 1866 amounts to 59,222. A large proportion of the Specifications enrolled under the old law, previous to 1852, embrace several distinct inventions, and many of those filed under the new law of 1852 indicate various applications of the single invention to which the Patent is limited. Considering therefore the large number of inventions and applications of inventions to be separately dealt with, it cannot be doubted that several properly belonging to the group which forms the subject of this volume have been overlooked. In the progress of the whole work such omissions will from time to time become apparent and be supplied in future editions.

This volume contains Abridgments of Specifications to the end of the year 1866. From that date the Abridgments will be found in chronological order in the "Chronological and "Descriptive Index" *see* (List of Works at the end of this book). It is intended however to publish these Abridgments in classes as soon as the Abridgments of all the Specifications from the earliest period to the end of 1866 have appeared in a classified form. Until that takes place, the reader (by the aid of the Subject-matter Index for each year) can continue his examination of the Abridgments relating to the subject of his search in the *Chronological* and Descriptive Index.

PREFACE.

This, the fourth and concluding volume of the "Wearing Apparel" series, relates to dress fastenings and jewellery.

With regard to dress fastenings the volume comprises belt fasteners, clasps, and buckles (including buckles other than those used for dress); buttons; coat links; hooks and eyes; eyelets; dress holders and suspenders; safety pins; methods of preventing robbery and loss from the person (including safety pockets, and pocket, watch, and watch guard protectors); tags for laces; crinoline fasteners and clips; parasol holders; carding and preparing for sale buttons, hooks and eyes, &c. For modes of fastening leggings, gaiters, stays, gloves, cravats, stocks, and garters, Part II. of the Wearing Apparel series must be consulted, as this division only relates to improvements in the fastenings themselves. The jewellery includes beads; swivel rings for watches; watch keys when improved as ornaments; imitation stones, coral, ivory, jet, tortoiseshell, pearl, &c.; and cutting and polishing precious stones. Jewel cases or boxes have not been admitted into this volume. They will appear in a series entitled "Trunks, portmanteaus, boxes, and bags."

H. READER LACK.

August, 1876.

INDEX OF NAMES.

[The names printed in *Italics* are those of the persons by whom the Inventions have been communicated to the Applicants for Letters Patent.]

Page
Abel, C. D..............316, 336
Aberdein, W. C...............227
Abrahall, J....................359
Adams, B........................32
——, T.......................291
Aingworth, B........43, 76, 93
Allen, S.........................136
Allender, J. F..........417, 429
Allies, M.........................436
Allport, E........................147
Alston, J...................14, 21
Amphlet, S.............209, 327
Anderson, C. F...............426
Andoe, F.........................376
André, J. L.................. 337
Andrews, H....................382
——, J...................382
Antill, A.........................372
Aron, L..........................324
Ash, A............................240
Ashton, J..................17, 450
Ashwin, T.......................367
Aston, J......48, 85, 111, 140, 217
——, W.........349, 403, 421
Atkins, E........................380
Atkinson, W. H.......346, 360
Avery, J.........................259

Badcock, J.............245, 457
Bailey, H...............127, 328
Bannister, J. J..............222
Bapterosses, J. F..........220
Barnes, W. L.................385
Barnett, G..........51, 62, 223
——, J.........................34

Page
Barnwell, S....................289
Barratt, O. W.................214
Barre, J. B. H................268
——, J. B. M................268
Barrow, H......................258
Barsham, W. J..................69
Baugh, B........................267
Baumann, C...................329
Beater, J. G......................88
Beaver, L.......................248
Bell, J.............................33
——, W......................4, 31
Bellford, A. E. L............172
Benbow, T. M.................104
Benson, J. W..................230
Bent, J..................254, 292
Berry, M..........................53
Bethell, J.......................318
Bettle, P........................371
Béziel, P. M. C..............420
Blackburn, B..................371
Blackham, J. J...............406
Blatin, H........................162
Boggett, W.....................445
Boland, R.......................138
Bond, R.........................442
Bonneville, H. A......389, 424
Booth, A........................256
Boubée, A..............345, 355
Bouché, P......................253
Bourdon, E...................187
Bouret, J. L. A..............293
Bourne, T......................169
Bousfield, G. T......404, 433, 443, 453
Boyle, A........................117

Page
Bradshaw, G. 135
Braithwaite, A. S. 99
Brant, J. 217
Bresson, M. 266
Bridges, W. 82
Brierley, J. H...186, 263, 271, 302, 330, 335, 360, 373, 377, 401
Brindley, W. 144
Brockedon, W. 113
Brookes, T. 291
Brooman, R. A. 237, 280, 324, 406
Brough, N. 171, 175, 177, 187, 189, 215, 241, 249, 295
Brown, J. 35
———, W. F...280, 291, 306, 375
Brunker, Sir W. 1
Buffoni, J. B. 394
Bufton, E. 164
Buller, G. N. 270
Burgess, E. 396
Burke, W. H. 105
Burn, C. 237
Burrell, S. 48
Bussell, W. J. 442
Bussey, G. G. 397

Cadbury, J. 313
Carpenter, S. A. 126, 180, 286
Carter, W. 194
Cartwright, B. 1
Cashin, T. F. 417, 429
Chamberlain, H. 425
Chambers, T. 73
Champion, M. H, ...345
Changeur, M. L. 434
Charles, H. 383
Chartraire, F. A. 184
Chassang, P. E. 300
Chater, J. 13
Chatwin, J. 80
———, J. F. 148, 197
———, *T. T.* 99, 197

Page
Chaumette, I. de la 1
Cheston, T. 17
Christophers, J. 44, 45
Church, W. 42, 64
Clark, W...293, 294, 332, 337, 339, 340, 358, 411
Clay, H. 3, 18, 27
Clements, J. M. 189, 325
Clutterbuck, T. 447
Coathupe, H. B. 333
Cockings, J. S. 169
Cole, S. 221, 326, 365, 375
Collins, W. 4
Comfort, E. 343
Cooke, E. 308
Cooper, G. P. 145
———, Jno. 13
———, Jos. 124
Cope, J. 201, 236
Cordier, L. 237
Cornforth, H. 191
Couchman, G. 382
———, R...361, 369, 393
Cousin, A. 294
Cox, T. 171
Crane, J. 328
Cross, J. 317
Crosse, A. Y. 179
Cutler, J. H. 368

Dadley, A. P. 241
Dahis, F. 433
Damiron et Gingembre...334
Dance, E. 314
Davenport, T. W. 221, 326, 375
Davey, S. 282
Davies, G. 402, 415
———, T. 35
Dawson, T. 185, 259
Dean, T. 386
Dècle, A. 220
De Fontainemoreau, P. A. le Comte 162, 168, 224
De la Chaumette, I. 1
De la Mayne, T. 12
De Landfort, L. 233

Page
Delebarre, F. X. A.........406
————, *J. F. X. F*....406
Delon, A.........................226
De Ruolz, H. C.......316, 336
Desborough, S...............322
De Serionne, L. J. J........129
De Wailly, C...................392
Deykin, J.........................38
———, W. H.....................38
Dez Maurel, F. M. A........75
Dixon, A.........................366
Doherty, J.......................242
Dollier, H.......................280
Dore, J. T.......................189
Doudet, C......................424
Drault, F. A...................220
Dromtra, F. W. C............456
Dudley, W.........................18
Duley, E..........................207
Duméry, C. J..................157
Dupont, H.......................339
Durafour, J. M...............119
Durant, D.......................426
Dutfoy, R........................358
Duthoit, A. M.................144
Dutson, T.......................253
Duval, A.........................294
Dwyer, T...........................39
Dyormet, A. F................238

Eades, R. E....................377
Edge, W. C.....................346
Edkins, C.........320, 323, 424
Edridge, J..............217, 219
Edwards, J......244, 251, 255, 260, 267, 270, 289, 322, 353, 358, 387
———, S.........................374
———, W. T....................390
Eginton, J.........................15
Eley, W...............................8
Elin, J...............................25
Elliott, W......51, 85, 95, 102, 143
Ellis, J............................333
Emanuel, H............335, 420
Emes, H.................307, 318
Empson, J. F......91, 139, 240
Esschen, M. C. van.........63
Eyland, C...............239, 352

Falconer, W.......................72
Farmer, C.......................298
———, G...............392, 411
———, G. J......................208
———, W.........................298
Fase, B. W......................175
Fauche, E.......................332
Feldtrappe, A. A............358
Felton, A........................251
Fenby, J. B....................383
Ferré, C. T.....................293
Field, E...........................447
Finch, T. F............161, 173
Fisher, B. S....................442
Fletcher, H.....................334
Florange, E. H................446
Fontainemoreau, P. A. le Comte de.......162, 168, 224
Fontenay, A. L. M.........336
Forrest, A.......................221
Forrester, D...................231
Forster, T.......................118
———, W. H...................210
Francis, J..........................16
Franklin, F. M..................73
Fraser, J.........................391
Frearson, J.......83, 150, 228, 261
————, S.....................178
Freeth, T...........................24
Fried, F...........................450
Friedmann, A.................250

Gardner, J. L..................191
Garrick, T............443, 453
Gaudibert, H..................193
Gaunt, R.........................179
Gedge, W. E....300, 443, 452, 454
Gengembre, P. W............381
Ghidiglia, S.....................209
Ghidiglia, S....................300
Ghislin, T. G.........307, 385

Page
Gibbs, G. 390
——, H. 54
Gilbert, D. 297
Gill, C. 308
Gingembre et Damiron ... 334
Girardet, C. 338
Giuliano, C. 426
Glover, T. 156
Godding, T. 194
Godfrey, W. W. 328
Goode, B. W. 138
Goodyear, C. 137
Goll, A. T. N. 207, 364
Gordon, A. I. L. 408
Gottheimer, H. 435
Gouda, P. F. 252
Gray, W. 7
Greaves, T. 416, 424
Green, E. 202, 313, 331
——, E. J. 374
Greenfield, J. 264
Greenwood, B. 360
Griffin, W. 207
Guest, B. 30
Gueyton, A. 265

Hachin, G. E. 389
Hackett, J. 176, 183
Hall, G. 11, 34
——, W. F. 253
Hancock, T. 37, 108, 113
——, W. 117
Hands, F. 348
——, S. 24, 26
Hannart, L. J. 370
Harding, G. P. 131
Harlem, J. L. 422
Harris, T. 70
Hart, H. W. 419
Hartley, G. 418
Haseler, G. C. ... 310, 321, 337, 410
——, J. B. 410
——, W. H. 303
Haseltine, G. 234, 257
Hautecloque, P. D. 340
Hawkins, J. I. 63

Page
Haworth, P. 177, 181
Hayem, I. 451
Hayem, S. 304, 382
Haywood, H. 278
Heaton, R. 32
Heaven, C. W. 416
Heeley, C. 72
Heinemann, L. 314
Helcman, S. 419
Henry, M. 334
Herbert, L. 55
Hess, R. H. 252
Hewson, A. E. 149
Hickman, H. 336
——, R. 20
Hiler, S. 244
Hill, C. 270
Hinks, J. 266, 363
Hipkiss, J. 173
Hobdell, H. B. 120
Holden, H. A. 226
Holland, H. 348
Hollands, E. R. 431
——, J. 431
——, T. 431
Hollingsworth, T. 171
Holloway, J. 448
Holmes, J. 47, 54
Horne, J. 1
Horrex, T. 215
Hougham, S. 34
Huber, J. J. 238
Huddart, G. A. 350, 351, 353, 394, 417, 428, 459
Hughes, H. 283
Huskinson, H. C. 368, 378

Iles, C. 109, 112, 124, 126
Iliffe, C. 265, 275, 289
——, H. J. 163, 166, 171, 186, 204
Ingram, T. W. 45, 50
Isaacs, S. 182
Islip, T. 297

Jackson, G. I. 157
——, H. D. 157

Page
Janvier, V. A.................319
Jaquin, C. A.........52, 68, 161
Jefferies, H................49, 71
Jeffery, W.........280, 291, 306
Jenkins, H......151, 166, 212, 414
———, M....................119
Jenks, T......................440
Jerome, T.....................203
Jesson, H...................324
Job, A. M.....................190
Johnson, J....................150
———, J. H...173, 185, 187, 223, 304, 311, 349, 362, 460
Jones, F. J.......153, 226, 256
———, G. D.................440
———, J.....................320
———, R. H..................359
Jourdin, M....................359
Jukes, J.......................23

Kain, J. F....................364
Kenrick, S....................114
Kilby, G. T...................295
Kinnings, L...................390
Kosmann, T....................141
Kuplenschmidt, W........304

Labat, P..............354, 399
Lake, W. R.............430, 439
Lancelott, J.....287, 339, 343
Landfort, L. de...............233
Landsberg, E..........276, 319
Lane, J. W....................356
Law, R.........................26
———, W.....................387
Lawrence, H...................103
Lazarus, I....................376
Lee, E. E.....................243
Lees, J.......................282
Lepage, F. C..................192
Lepeinteur, T.................323
Le Richeux, L.................286
Lewis, L. J...................247
Lilly, R. C...................424
Lingard, E. A.................315

Page
Lingham, G. C.................299
Lion, A.......................315
Littlehales, D................330
Long, J.......................219
Loveridge, T..................244
Lowe, B........................40
Löwenstein, M.................444
Luckock, J....................292
Ludwig, J.....................401
Lund, L. A. W.........388, 405
Lutwyche, C. T................110
Lyons, A......................255
Lysnar, G. L..................154

Mabley, W. T.............66, 97
Mac Clenahan, J...............437
Mac Doual, J. E...............306
Mac Dougall, C................328
Mac Evoy, H......69, 116, 156
Macintosh, J..................445
Mackenzie, C...................29
Mac Millan, A.................363
Mair, R.......................225
Mangin, L. A................269
Manton, J. S..................297
Marie, H....................223
Marquard, F.................439
Marsden, C....................211
———, W.....................357
Mason, A. C.................303
———, *H. H*................303
Mason, R......................374
Masters, J....................121
Maundrell, R....................1
Maurel, F. M. A. dez...........75
Maurice, S. S.................382
Maxwell, J.....................25
Mayne, T. de la................12
Meacham, G..................311
Meall, H. L...................243
Mennons, M. A. F..............269
Miles, T......................427
Mill, W.......................218
Mills, W.......................87
Milward, T....................230
Mittler, J. E...............411
Monckton, E. H. C.............338

Page
Montleart, A.................367
Moore, H.....................216
Morin, E.....................432
Morris, T....................338
Morrison, J..................209
Mosley, G....................184
Moss, I.......................79
Munt, W......................227
Muschamp, J. B...............447
Myring, C....................296

Neale, E. V..................185
Neuscheller, T...............456
Newey, J. C..................460
——, J. G......96, 129, 238
——, T.........160, 162, 455
——, W. M.....................238
Newman, J........96, 129, 138, 163, 166, 186, 195, 204, 285, 331, 363, 424
Newton, A. V...131, 137, 201, 303, 396
——, H. E.....................434
——, W. E...220, 238, 304, 354, 422, 434
Nicholls, A..................247
——, B........................188
Nicklin, J...................299
Nicoll, H. J.................115
Nivert, C....................452
North, G................176, 205
Norton, C....................310
Nurse, C.....................448
Nutting, J. G................346

Old, G..................246, 263
O'Neill, P. B................169
Oram, G. J...................332
Orenstein, M.................302
Organ, T.....................183
Owen, W......................200

Palmer, F. I..................433
Parent, A. I. H.........188, 250
Parfitt, E...................335
Parkes, A...............193, 457
——, J....................67, 241

Page
Parnell, G. F................230
Parsons, W...................392
Paterson, J......149, 231, 255, 312, 355
Patrick, H. W................263
Payen, J. M..................173
Payne, T. L..................422
Pendleton, T.................246
Perks, T.....................373
Perreyon, B..................153
Perry, E. H...................257
Perry, G.....................461
Philippe, J....................9
Phillips, L. D...............437
Pickering, J..................22
Pidding, W...................235
Pilliner, F. J...............203
Pitt, G......................183
Player, W. D.................319
Playfair, W...................12
Pope, T......................164
Potts, F.....................206
Poupard, W...................224
Powell, H. B.................279
Prosser, R....................61
Proudfoot, F...................5
Pulvermacher, I. L...........413
Pumphrey, J..............66, 366
Purcell, J...................227
Pursall, W...................232
Putman, A....................385

Quinton, B...................152
Quiquandon, J. B. A..........180

Rabone, J.....................20
Randel, J. H.................361
Rascol, E. H.................190
Ravaut, C. A.................332
Reading, F. F...........428, 449
——, G. E...............428, 449
——, J.......100, 198, 301, 428, 449
——, S. A...............428, 449
——, W........................383
Reed, W. H..............402, 415
Reignolds, H...................1

Page
Renard, L. F.........394
Reynaud, L. P.........292
Rhind, A. F.........311
Richards, J.........458
———, W. A.........347
———, W. H.........407
Richeux, L. le.........286
Rodgers, G.........46
———, J. H.........56
Rogers, W.........147
Rollason, A.........289
Rose, J.........21
——, K.........174
Rostaing, C. S.........273
Rowlands, J.........170
Rowlett, W. T.........370
Rowley, C......57, 73, 81, 106, 122, 128, 133, 167
Ruolz, H. C. de......316, 336
Ryland, T. H.........183, 192

Sabberton, J.........60
Salvy, L..........443, 454
Sanders, B.........36, 38
Sanderson, W.........78
Sanguinède, A.........154
Sassé, P. C.........394
Scheidel, A. E. C.........252
Schuberth, J.........274
Schweizer, R.........432
Scott, J. W......199, 274, 403
Searle, C.........408
———, G. E.........456
Serionne, L. J. J. de......129
Seymour, G.........99
Shaw, P..........277
Sheldon, C.........276
———, W.........94
Sheppard, J.........404
Simpson, T.........85
Singer, I. M..........396
Singer, J.........409
Smith, A.........325
——, C.........110
Smith, D. M..........303, 385
Smith, E.........232, 301
——, Jabez.........181

Page
Smith, Jas.........30
——, Jno...2, 271, 272, 281, 284
——, W. H.........77, 86
——, W. J.........165, 179
Souter, J.........142
Southall, H.........462
Speight, G.........232, 285
Spence, J.........224
Spiquel, M.........446
Stanley, A.........368
Stautz and Co.........314
Stedman, J.........6, 7, 23
Stevens, J.........322
Stewart, H.........174
Stocker, A. S.........72
Strawson, E.........356
Sunderland, J.........424

Tamisier, V. E.......349, 362
Tatain, J.........46
Taylor, B.........323
———, D.........10
———, E.........342
———, J. G....135, 154, 212, 299, 351, 400, 446
Tent, W.........366, 367
Thérèse, L. A.........197
Thiercelin, E. E..........460
Thomas, W.........90
Thompson, W.........197
Thurel, F. N.........316
Tissinier, J..........300
Tomlinson, E.........190
————, J.........305
Tordery, C. A..........452
Toussaint, J.........260
Towers, J. R.........447
Towne, L..........404
Trotman, T.........286
Tubino, F.........459
Tucker, E. S.........399
Turletti, L.........209
Turner, J.........81
———, J. P.........196
Tutin, W.........2
Twigg, G.........145

Page
Tylee, J....................22, 27
Tyndall, T....................40

Unsworth, W....................61

Valda, J....................255, 262
Van Esschen, M. C.....................63
Vaughton, O....................462
———, T....................462
Vigurs, H....................278

Wailly, C. de....................392
Wakefield, B....................57
Walker, J....................432
———, R....................152
———, T....................247, 284
Walsh, S....................186
Walsham, J....................338
———, R....................338
Wardroper, W....................91
Watkins, W. B....................430
Watson, A....................365
———, E....................325
Weare, R....................338
Weatherdon, B. F....................452
Welch, J....................426
Wells, G....................266
Westbury, W....................308
Weston, T. A....................309
Westwood, O....................19
White, G. F....................425

Page
Whitehouse, I....................3
Whitley, C....................262
Whitmore, W....................29
Whittaker, J....................451
Whittle, W....................195
Wild, W. C....................361
Wilkins, T. B....................230
Wilkinson, T. B....................311
———, W....262, 329, 372
Williams, A. H....................390
———, J....................1
———, J. H....................132
———, W....................3
———, W. G....................391
Willis, J....................167, 168
Wilson, C....................197
———, C. E....................345
———, T....................342
Winkles, J. O....................381, 387
Winwood, D....................5
Woodbury, W. B.. ...398, 442
Worton, J....................142
Wolverson, E....................412
Wright, H....................421
———, Jas....................266, 277
———, Jos....................245
———, J. S....199, 216, 270, 416
———, W....................264
Wurtz, H.....................434

Zysel, F....................290

WEARING APPAREL.

DIVISION IV.

DRESS FASTENINGS & JEWELLERY.

A.D. 1631, January 24.—No. 54.

BRUNKER, Sir William, REIGNOLDS, Henry, and HORNE, John.—"Making of kersie seeves, otherwise called "twillie seeves," and "making of bedes of bones and wood."

[No Specification enrolled. Letters Patent printed, price 4*d.*]

A.D. 1683, April 25.—No. 225.

MAUNDRELL, Richard, and WILLIAMS, John.—"Mistery "of casting and makeing hollow pewter or block tynn buttons."

[No Specification enrolled. Letters Patent printed, 4*d.*]

A.D. 1721, August 12.—No. 434.

De La CHAUMETTE, Isaac.—"The making of divers engines, machines, and instruments of several kinds." Among the articles made are mentioned "buckles without anchors" and "made with a folding tonge."

[No Specification enrolled. Letters Patent printed, 4*d.*]

A.D. 1749, January 31.—No. 639.

CARTWRIGHT, Benjamin.—"A new kind of steel candle "snuffers and stand"; also "a secret spring to secure a "watch either in the fob pockett of a man or hanging by "a lady's side." The spring (which the patentee does not describe) may readily be fastened "to the waistband of the "breeches" or to "a lady's petticoats." A man puts his chain, and a lady the hook of her chain, "into a loop" which "by an easy pressure" locks the chain or hook.

To take out the watch, pressure on a small knob or button "throws the said loop open easily."

[Printed, 4*d*. No Drawings.]

A.D. 1770, May 25.—No. 959.

SMITH, John.—"A new method of making and manufacturing "gold and silver buttons and studs set with stones, pebbles, "cornelians, paste, and glasse, by making the cups or bottoms "thereof out of one entire solid thick piece of gold or silver; "without any sodering, with a new letter link to the buttons "to distinguish them from the buttons of other makers." The directions given are :—Roll the metal to the thickness required for the cups. Punch out pieces thereof round or oval according to the intended shape of the buttons or studs. Fix a steel punch and a steel die in a press, put one of the pieces into the die, and drive the punch down; this "thins "the bottom of it and thickens the bezel for the cramps." The punch and die are to be made "quite plain, without the "little nicks or notches."

To make a slighter or inferior sort of buttons or studs, place "the bottoms which are usually thinner than the others" in a die and strike them up "with a common punch, but with "the metal or lead force fixed to it."

To finish the cups or bottoms, use the same punch and another steel die of like shape "with the addition of the little "nicks or notches in it"; place the cup in the die, "and with "a metal or lead force strike the punch into it"; this completes the cup "with the cramps on it for fastening the "stones."

The same effect, "both as to making the cups and forming "the cramps upon them, might also be produced by various "methods."

[Printed, 4*d*. Woodcut.]

A.D. 1772, June 13.—No. 1019.

TUTIN, William.—Varnishing buckles. The buckles of iron, steel, or copper, are polished, silvered over with leaf silver, painted with "Persian blue," and varnished with "a

" varnish made of gum copoll"; they are than put into a stove and kept therein until the paint and varnish are well dried, when they will be fit for use.

[Printed, 4*d*. No Drawings. *See* Rolls Chapel Reports, 6th Report, p. 161.]

A.D. 1774, August 31.—No. 1077.

WHITEHOUSE, ISAAC.—" Making coat buttons, breast " buttons, sleeve buttons, vest and other buttons, studds, " bracelets, necklaces, lockets, rings, watch chains, boxes, " and trinkets." These articles are made by pasting silk upon paper and fixing the silk and paper "under glass tops " or covers as a foil." The tops are fastened on " moulds or " bottoms of various sizes and constructions by mounts or rims " of gold, silver, or other metal."

[Printed, 4*d*. No Drawings. *See* Rolls Chapel Reports, 6th Report, p. 162.]

A.D. 1777, March 6.—No. 1148.

WILLIAMS, WILLIAM.—" A composition of gold, silver, and " metal, for making coat and waistcoat buttons." The composition of the metal " is gold, silver, copper, and brass when " manufactured by mixing the copper and brass when melted " together or separate." The directions given are, "when " cast, plate it with silver and flatt it, and shape it to the " size of a button, then shank it or loop it with the same " metal, and gild the complete button." Then "scrape the " gold off in different parts" from the surface of the button until the silver again appears, and chase it to any pattern.

[Printed, 4*d*. No Drawings.]

A.D. 1778, February 5.—No. 1180.

CLAY, HENRY.—" Making or manufacturing coat, breast, " sleeve, vest, and other buttons, japanned, with or without " shanks or catgutt, or set in cups or sockets of various " metals." Layers of paper are pasted on boards or plates, " on each side the same to prevent one side counteracting or " drawing with superior force to the other in the state of " drying." When the plates are rendered sufficiently strong to be made into buttons, "the same are planed or cut off at " the edges." The plates are put into a stove "sufficiently " hot to deprive them of their flexibility" and " at the same

" time are rubbed over or dipped in oil or varnish, which so " immediately drenches into them as to secure them from " damps or injury." The plates are afterwards cut into round, oval, or other shaped blanks, and a hole is drilled through the middle of each for the admission of a metal shank. The shank is passed through and "returned on the " other side." The blank and the shank "are fyled and " levelled together," and a piece of paper is glued or otherwise fastened "on the top side." The blank is brought into the form of a button in a lathe "by turning it off on both " sides."

The buttons are coated with japan and then ornamented with painting, gilding, &c. or "inlayed with pearl, stones, " metal, and various other ornaments."

Sometimes the shank is made with a head which may be " covered with japan or finished in ornament."

If the buttons are intended for setting in metal or other cups, the blanks are set therein "with metal, cattgut, or other " shanks."

[Printed, 4*d*. No Drawings. *See* Rolls Chapel Reports, 6th Report, p. 164.]

A.D. 1778, March 20.—No. 1187.

COLLINS, WILLIAM.—"A method of preparing, gilding, " polishing, and burnishing a metal (or metals) plated with " silver, for making buttons and other articles in the toy way, " both for use and ornament, by laying on the gold when the " metal or metals plated are in a state of much more con- " siderable thickness than when they have been before used " for the purposes aforesaid." The metals, after the gold has been laid on, are rolled "until they are brought to the " proper or usual size and thickness." Such as are required to be bright are afterwards passed between a pair of rollers, one of which moves slower than the other.

[Printed, 4*d*. No Drawings.]

A.D. 1779, December 26.—No. 1242.

BELL, WILLIAM.—"A more speedy method of affixing im- " pressions from dies upon gold, silver, or mettals, by means " of rolling cylanders, on which such dies are engraved, which " would be to the great benefit of trade, particularly to the

" buckle, button, and toy manufactories." The rollers are of any suitable metal; they are " engraved, sunk, or im- " pressed with dies of buckles and buttons, which are confined " opposite to each other in a frame." The metal to be made into buckles or buttons receives the required impression by being passed between the rollers.

[Printed, 4*d*. No Drawings. *See* Rolls Chapel Reports, 6th Report, p. 165.]

A.D. 1780, December 13.—No. 1273.

WINWOOD, DANIEL.—" New method of making and manu- " facturing buckle chapes."

[No Specification enrolled. Title printed, 4*d*.]

A.D. 1781, May 28.—No. 1293.

WINWOOD, DANIEL. — " A method of making and fixing " together buckle chapes and tongues." The directions given are (1) for the chape :—Cut out a groove in the part to which the tongue is to be connected. Braze or solder a piece of round hollow wire into the groove. Cut out a portion of the middle of the wire.

(2) For the tongue :—Cut out a tongue (of any form or pattern) from a flat piece of iron and anneal it. Cut a groove in the part to be connected to the chape, and braze or solder a piece of round hollow wire into the groove.

Join the chape and the tongue "in the usual manner" and polish them.

In "turnovers" treat the chape as before. Cut out a tongue as before; flatten the portion to be connected to the chape, anneal it, and "turn the part so made thin over a wire;" draw out the wire; braze or solder the turned over part, and join and polish as before mentioned.

[Printed, 6*d*. Drawing.]

A.D. 1782, December 2.—No. 1346.

PROUDFOOT, FRANCIS. — "New-constructed buckles with " new-invented fastenings." This invention relates to (1) shoe buckles, (2) knee buckles, (3) stock buckles.

The shoe buckle may be of various patterns. In one shown in the sheet of drawings there is (1) a "slope at the ends" which makes the buckle "set at an equal distance to bottom "of the shoe;" (2) two bars cast in the rim "having two "prongs or points fixt thereon to answer the ends of chapes "and tongues;" (3) an ornament (cast or fixed on the top of the buckle) "under which the strap may pass."

In another only one bar is cast in the rim; it carries two prongs, and other two prongs (without a bar) are "cast or "fixt in the rim."

In another the bars and their prongs "are in the middle of "the buckle;" this arrangement requires "a false strap," which covers the bars and "always appears free from "holes."

The knee buckle is made either with two bars carrying prongs, or with only one pronged bar in the middle and two prongs in the rim. The bar also carries an "anchor or fastening" formed on or riveted to it.

The stock buckle has a bar cast in the rim and studs riveted or cast on it; four prongs cast in the rim "supply the place of "tongues." By putting prongs on the bar instead of studs the buckle becomes "a jump buckle."

[Printed, 8*d*. Drawing. *See* Rolls Chapel Reports, 6th Report, p. 167.]

A.D. 1783, January 13.—No. 1350.

STEDMAN, John.—"A shoe and buckle upon an entire new "construction for the use of men or women." The bridge of the buckle nearest the toe is much thicker than the bridge nearest the instep. Two plates are fixed to the bridges in or near the middle of the buckle. Between the plates is a slider working in a groove or grooves made in the upper plate; it moves in a direction from toe to heel by means of a spring or springs secured between the plates. Small spikes are fixed on the end of the under plate "nearest the instep;" they are fastened "in or under the ridge fixed on the upper part of the "vamp of the shoe." Over the upper plate is put "a piece "of foil covered with leather" or blackened; it is fastened under each end of the buckle by catches or hasps.

The shoe is made with "short straps," and eyes, hooks, or loops are fixed to their points. On the top of the vamp is a ridge for the reception of the spikes. Across the upper part of the vamp from strap to strap "goes a piece of catgut

" or string" (covered or not with wire) or of wire, and to the ends thereof are fastened hooks, eyes, or loops, which are to be united to those on the short straps.

The slider operates on the catgut or wire.

[Printed, 4*d*. No Drawings.]

A.D. 1783, November 14.—No. 1401.

GRAY, William.—" A new chape for buckles of a different " construction, and which is far more easy and convenient " than those now in use." A plate of metal having its outer edge notched is "fixed to the tongue of the buckle," and " in " the inside of the plate " there is " a chape to admit of the " strap." When the strap is "buckled in the usual way " it is to be turned " over the notched part of the plate," and "it " will never stir."

[Printed, 4*d*. Woodcut.]

A.D. 1783, December 19.—No. 1410.

STEDMAN, John. — "New constructed fastenings for shoe " buckles, knee buckles, stock buckles, and all other kinds of " buckles." In the "shoe buckle fastening for the patent " shoe without straps," a bar or plate of metal "crosses the " buckle in or near the centre," being fastened to it in any convenient manner. "In the bridges near the end of this " plate nearest the instep " a piece of metal is riveted or brazed (or cast with the plate) "obliquely towards the instep " and then extended and bent conformable to the foot in two " arms lengthwise of the buckle." From these arms spikes point towards the instep. Near the end of the plate "nearest " the toe " is an arm bent into a hook; it "crosses the bar or " plate on the under side," and from it spikes " point towards " the toe." In using this buckle "the spikes in the arm " nearest the instep must be fixed in the ridge of the shoe," and then "the strap that is fixed on the wire that crosses the " shoe must be slid in the arm nearest the toe, hitched in the " spikes and turned under the buckle." A piece of leather covers the bar or plate that crosses the buckle.

A shoe can be buckled in the same manner "by fixing " spikes in the bridges " in the above-mentioned direction, or " by an under plate fixed to the upper plate with spikes " at each end in the direction aforesaid."

The knee buckle is made with a spike or spikes "near the " outside of the buckle on the chape side pointing from the " buckle," or with "hooks on the tongue side pointing to the " chape side." In buckles "covered over" (as rosettes) the chape is made in the shape of a half circle or half square. "A " double chape may be used."

The stock buckle and other buckles "are made the same as " the knee-buckles."

A fastening "to prevent the strap from coming out in common " buckles and to keep the vamp of the shoe from sliding under " the buckle:"—Spikes (one or more) are made in the bridge " nearest the instep;" or a piece of metal armed with spikes is fixed to the chape or to the wire that fastens the chape, " with the spikes pointing towards the instep." These spikes are to be "hitched in a ridge made on the upper part of the " vamp." A narrow plate "fastened to the bridges of the " buckle on the chape side, the form of the ring of the buckle, " projecting about the eighth part of an inch beyond the rim " on the chape side" is employed to keep the strap from coming out.

[Printed, 4*d*. No Drawings. *See* Rolls Chapel Reports, 6th Report, p. 168.]

A.D. 1784, April 17.—No. 1427.

ELEY, WILLIAM.—"A new constructed buckle or buckles " with new invented joint and spring chape fastenings." Bars (one or more) extend (or nearly so) "from side to side between " the bridges of the upper rim." At the end of the bar next the instep catches or hooks (one or more) lock together the upper rim and a "jointed double chape and tongue or under " buckle," and a joint at the other end of the bar allows the upper rim to be thrown back for the purpose of buckling or unbuckling the shoe. The chape and tongue are fixed "to " the sides of the said bar." In the bridge of the upper rim next the instep are "two or more cavities." To the bridge are fixed two springs, one end of which is fastened "to the inside" of the bridge; the other end of one "projects over one of the " said cavities, and the other across the other cavity" of the bridge. To each spring "is fixed a small knob which passes " through or underneath the bridge next the instep;" pressure on one of the knobs will unlock the upper rim and under buckle; pressure on the other will unlock a "strap spring," consisting of a piece of metal which extends (or nearly so) "the width of the buckle between the bridges." The strap spring carries "a small spring for the purpose of throwing up "the under buckle when relieved by the bridge spring;" it serves the purpose of "keeping fast between the upper rim "and under buckle a false strap of leather or anything the "shoe is made of." At about the middle at one end of the strap spring there is a knob, and at or near one corner of the other end a catch or hook, which shuts into one of the cavities, "and is received by one of the said bridge springs." One end of the strap spring "goes under a flat piece of iron, "steel, or metal, belonging to the joint next the toe, which "projects out for that purpose, with a notch therein" to receive the knob of the strap spring.

[Printed, 4*d*. No Drawings.]

A.D. 1784, July 20.—No. 1444.

PHILIPPE, JEAN.—"A spring or springs made of tempered "steel, either flat or square, upon a principle entirely new, "which is thinner, more supple, and fitter to be used for "garters, bracelets, boots, buckles, lashes, stays and jumps "for ladies, sword and other belts, binders for letters, and "bandages of every sort, also buckles for breeches and waist- "bands." One figure in the annexed sheet of drawings shows a garter which "goes twice round the thigh." The middle portion consists of "a flat and hard steel spring, the blades of "which are somewhat down to render it more smooth and "less thick;" it is an inch and a half long and "ought to "lengthen an inch and a half more;" it is "covered with a "ribbon fastened by a silver clasp," and a small double ribbon "goes in and through the said spring to prevent its breaking "when it is too hard pulled." The garter fastens with a buckle.

Another figure shows a garter "intended for those who "cannot bear a ligature round their thighs." "It is a spring "like the former but longer." At one end is a silver plate which is to be placed in a pocket "made in the waistband of "the breeches" with a hole for the passage of the spring; at the other end is a hook. For ladies' wear a hook is used instead of a plate. The spring "is covered all over with "a skin."

Another shows a garter (similar to the first) which passes only once round the thigh. "The springs are like the former "but longer and covered."

Another shows two springs (united) which are intended for stays. They are "of flat and hard steel, the blades of which "are open," and operate "by closing and shortening." A "silver blade" goes through "the bone of the stays and the "two springs" and "produces the intended effect."

Another shows an arrangement of springs for "ladies' jumps." There are four springs, the outer two closed, the inner two open; "they operate together and their movements are very "easy."

Another shows a spring fastened to a buckle which may serve for "all sorts of buckles." The spring is "of hard "steel, but bigger, wider, and shorter than the former;" it is secured to the chape, "is directed by two steel blades," and "lengthens and shortens as is required."

Another shows a spring for boots. It is about 2½ inches long with a button at each end. One button is put inside, the other outside the boot; "the outside one fastens to the "breeches."

Another shows a spring having a hook at one end and an eye at the other; "it serves for hats, bracelets, bandages, "ruptures, letters, ligatures, &c."

[Printed, 6*d*. Drawing. *See* Rolls Chapel Reports, 6th Report, p. 168.]

A.D. 1784, November 26.—No. 1456.

TAYLOR, DAVID. — "New-invented buckle chape or shoe "fastening on a new construction." The buckle is made with "a double chape or anchor, with one, two, or more spikes or "prongs on each side thereof," and "with or without a joint." The outer chape may be made "with or without a projection "or loop at one end," with studs or catches instead of prongs, or with "a plate of solid iron, &c. or otherwise, to which a "false strap is or may be fastened;" or it "may be used with "only the straps of the shoe and may be fixed to the buckle "rim by a pin and screw," nails, or rivets.

The inner chape, "of one solid plate or otherwise," may be fastened to the outer one by screw, rivet, or joint, or it may be fixed to the buckle rim; it "is so jointed to the side or end

" of the chape next to the toe that it may fold or turn back" in order to give the buckle rim "liberty to fall down in the " fore part of the foot." The inner chape has one or more catches or prongs on the end or side next the instep, "the use " of which is to go into the vamp" of the shoe. In order to pull up the vamp a strap may be "cut, or slit out, or left on " the said vamp," or a strap of any substance may be sewn on to it. The inner chape has prongs or studs or catches "on " any part of it, whereon a false strap or top may be fastened, " the use of which is to have the same portion or quantity of " leather above the buckle rim to which said double chape is " fixed, whether the said rim be high or low on the foot."

The method of fixing the buckle on the shoe is described in the Specification.

[Printed, 6*d*. Drawing.]

A.D. 1784, November 29.—No. 1457.

HALL, George.—"Improvement in the construction of " chapes for shoe and other buckles." First, the chape is made with a spike or spikes on one side, with a tongue on the opposite side, and with a bar "to cross from the chape to the " tongue, either at the end, middle, or any other part of the " chape." The bar carries a spike or spikes. When this " chape is fastened to the rim of the buckle, it "leaves an " open space between the two sides of the chape," so that when the strap of the upper leather is fixed upon the spikes of the bar, "the quarters of the shoe will be kept closer to the " heel," and "the upper leather smooth."

Secondly, a tongue may be fixed to the chape or rim of the buckle at one end of the chape "to rest on the bar which " crosses from the chape to the tongue, to serve instead of a " spike or spikes upon the said bar."

Thirdly, the bar may be converted into a tongue and held by the same fastening as the chape, "such tongue to rest on " another bar or rim of buckle."

Fourthly, instead of the cross bar, a buckle with a tongue or spikes "at the end within side thereof" may be placed between the tongue and the chape and be fastened (with or without springs) either to the chape or rim of the buckle.

Fifthly, the tongue and chape may be one piece and be fastened at one side thereof to the rim of the buckle, "so as

" to turn with a spike or spikes at the side and at one end " of the chape." The tongue, "or a spike or spikes to serve " as a tongue on the other side of the chape," may rest on a bar or the rim of the buckle.

[Printed, 6*d*. Drawing. *See* Rolls Chapel Reports, 6th Report, p. 170.]

A.D. 1785, February 26.—No. 1466.

PLAYFAIR, WILLIAM.—"New methods of making shoe, " knee, stock, and other buckles, of silver or other metals, " and of covering the surfaces of copper or other metals, with " silver, gold, or mixtures of silver or gold with other metals." This invention relates (1) to the manufacture of buckle rims; (2) to the plating of surfaces of metal with alloys of gold or silver.

1. The rim is made from a bar of metal "equal in breadth " to the intended breadth" of the buckle rim and "about " twice as thick" as the rim is to be. The bar receives any " impression, figure, or ornament" by either rolling, stamping, drawing, or swaging; it is then annealed, and cut into suitable pieces if the rim is to be four-sided or eight-sided, or bent into shape if the rim is to be round or oval. The ends are soldered together, and "the other operations necessary to finish " the buckles are the same as with common cast buckles."

2. "A thin sheet or plate of the silver, so much alloyed with " copper that it will melt sooner than either of the two metals " that are to be united," is inserted between the metal to be plated and the silver wherewith it is to be plated. The three are laid on an anvil, and "a flat die is laid upon them, which is " beat down with a large hammer so as to bring the surfaces " completely in contact with each other;" they are then bound together, put into a plating furnace and kept therein until " the intermediate piece of silver appears to melt;" after this the whole is "treated in every respect in the same manner" as metal plated with pure silver.

[Printed, 4*d*. No Drawings. *See* Rolls Chapel Reports, 6th Report, p. 171.]

A.D. 1785, May 3.—No. 1475.

DE LA MAYNE, THOMAS.—"New invented art of making " buttons of burnt earth or porcelain." These buttons may be made from any of the composts used in making china, stone, or other ware. The compost "when tempered and dried" is moulded or turned into buttons of any shape required. On the underside of the button there is raised a cone-like shoulder which is pierced crossways for the passage of thread, &c. Or the button may be formed with a shank of the same material, or for the reception of a metal shank; or it may be moulded and shaped for setting in metal. When the button is formed, it is put into a biscuit kiln and kept therein until it becomes "a firm, hard, durable, and lasting consistence or body;" when taken out, it may be ornamented in any desired manner "or polished by the polishing wheel."

[Printed, 4*d*. No Drawings. *See* Rolls Chapel Reports, 6th Report, p. 171.]

A.D. 1785, May 24.—No. 1482.

COOPER, JOHN.—"A new method or invention of japanning "or blueing buckles and clasps for mourning, of a very fine "blue colour, upon buckles and clasps of any form, size, "shape, or dimension, made of tin, pewter, lead, or any other "whited or white metal, or any mixture or composition of the "said metals." Any white metal (except iron or steel) is shaped into buckle rings and polished, engraved, chased, &c. The rings are then varnished or coloured with a paint composed of Prussian blue ground with spirit of turpentine and mixed with clarified oil and spirit of turpentine wherein gum copal has been dissolved. The varnished rings are kept in a stove until they are dried; chapes and tongues are put to them, and they are then finished.

[Printed, 4*d*. No Drawings.]

A.D. 1785, August 5.—No. 1495.

CHATER, JAMES.—"An instrument which is called 'a watch "'and note guard,' which effectually prevents pickpockets "from robbing persons of their watches, and will likewise "prevent accidents which too frequently happen to persons "wearing watches and carrying notes in their breeches "pockets, and which watch-guard may likewise be worn to "ladies' watches." The guard for a man's watch consists of (1) a shank riveted to the upper portion of the watch case; (2) a guard case screwed to the shank; (3) a tongue jointed to the shank, pushed out of the case by (4) a spring, and held in the case (when not in use) by means of (5) a bolt or stud; (6) a bow to which the watch-chain is attached. A "pocket spring" of elastic metal is sewn (by aid of a perforated cross piece at one end of it) inside the watch pocket. When the tongue is pushed out, "it stops against the pocket spring;" it lies behind it, "and prevents the watch from being pulled out till " the wearer pushes back the pocket spring with his finger, " which lets the watch pass by." Sometimes "a bed-hook" is added to the back of the guard case.

The guard for a lady's watch is made in the shape of a hook. The tongue jointed to the stem of the hook is pushed out and held back (when not in use) as before by a spring and a bolt carried by the stem; when pushed out, its free end takes into a recess made near the end of the hooked part.

The note case "is curved to fit the thigh and opens at the " top wide enough to admit the hand by means of thin gussets; its opens and shuts at the top by means of a spring nib. The protector is fixed near the bottom; "the work is exactly the " same as the watch guard," except that the bolt or push-piece has an additional spring connected to it. The pocket spring is "made lengthways of two pieces and curved to sit easy " to the thigh with a cross piece at each end to sew it to the " pocket." The tongue "catches behind the pocket spring" and prevents the note case from coming out "till you put " your hand down the outside of the note case and turn your " fingers up to the push-piece and push it up; then shut the " tongue, and you may take out the case."

[Printed, 1*s*. Drawing.]

A.D. 1785, November 19.—No. 1511.

ALSTON, James.—"Lining, edging, plating, and covering, " either in the whole or in part, with silver or gold, or other- " wise, buckles and other articles made of iron, copper, or " other metals or mixt metals, by the use and application " of tin or alloyed tin." In this Specification (which the patentee states to be "necessarily long and diffuse") 12 processes with modifications are described; some for giving " a durable covering of tin, silver, or gold" to the edges and bottoms of buckles; others for covering or inlaying buckles with silver and gold and for plating spoons, forks, and spurs; others for giving impressions by means of rollers to the plates of silver and gold before fixing them on buckles, and others for covering with tin, silver, gold, or other metal, buttons, made of wrought or cast iron.

The patentee describes first of all of the processes hitherto in use and "their necessary apparatus," among which he enumerates (as required in most of the processes) a plating stove, tongs or nippers, a buckle "called a captain inclosed "in a tin stock called the swageing stock," a swageing steady or small anvil of iron, a leaden hammer and cloth list for swageing with, a plating stock, anointing brushes, sal ammoniac water, sublimate water, and clay, whiting, or other earth moistened in water.

He next explains at length different methods of tinning the edges, tops, and bottoms of buckle-blanks (sometimes he French-plates them with leaf silver) and of plating them "either by dipping or filling or by burnishing on the plating "metal."

He then mentions two of his methods of stamping plated buckles; sometimes he does this by means of dies; sometimes he impresses the silver plates before they are soldered to the buckles by means of rollers.

In button making he rolls the iron to a suitable thickness, cleanses it, stamps out blanks, cleanses them, stamps them "red hot" in an engraved or plain die which gives them a convex impression on one side, takes off any fraze or selvage, rounds them in a lathe, solders on or rivets in the shanks, again cleanses them, tins them by heat in a revolving barrel containing tin or a mixture of pewter and sal ammoniac, dries them and polishes them. Some may require restamping. Such as are to be plated are covered on the top with leaf silver or other leaf metal by either a hot or cold process.

Near the end of this long Specification the patentee states that "it seems impossible to enumerate every means" of carrying out his invention.

[Printed, 8*d*. No Drawings. *See* Rolls Chapel Reports, 6th Report, p. 172.]

A.D. 1786, January 31.—No. 1521.

EGINTON, JOHN.—"A new method of making buttons and "button moulds of wood." Veneers or strong shavings of wood are glued together to make up a thickness for the bottom portion of the buttons, "observing always to cross the grain." They are then cut into pieces somewhat larger than the intended size, and are drilled through the middle for the admission of a metal shank. The top portions are made in like manner but generally without a hole. The two portions are glued together, and when the glue is dry, they are shaped into buttons by means of a lathe, centre-bit, or other cutter. The buttons are then coated several times with oil, spirit, or other varnish, taking care that each coat is properly hardened, before another is applied.

The top portions may be varnished and shaped before they are glued to the bottoms. The bottoms may be ornamented in any desired manner. The tops may be set in metal or other cups or rings. Sometimes the bottoms are made of one solid piece of wood. Sometimes other materials are mixed with the wood, such as paper, leather, bone, silk, cloth, or thin pieces of metal. Sometimes the buttons are made of sawdust, raspings, chaff, or similar substances, mixed together with glue and shaped in moulds and a press into boards from which buttons are cut as above described.

[Printed, *4d.* No Drawings. *See* Rolls Chapel Reports, 6th Report, p. 175.]

A.D. 1786, January 31.—No. 1528.

FRANCIS, John.—"Making coat, waiscoat, and sleeve buttons "from pig iron, commonly called cast iron, and japanning and "painting the same of different colours and devices." The iron is melted and run into moulds filled with sand or loam, "wherein the impressions of coat, waistcoat, and sleeve buttons "have been first taken off from leaden or other patterns." The buttons are then annealed for about 12 hours and are afterwards prepared for japanning or painting by scouring, turning, or otherwise cleaning. The japanning is effected by coatings of size or priming consisting of oil and colours or of a varnish composed of oils, spirits of turpentine or tar, umber, asphaltum, black resin, or amber; each coating is to be hardened by heat before another is applied. When the last coating is hard, the buttons are ready for polishing, painting, gilding, &c.

[Printed, *4d.* No Drawings. *See* Rolls Chapel Reports, 6th Report p. 175.]

A.D. 1786, July 1.—No. 1549.

CHESTON, THOMAS.—"Making elastic spring buckles and " spurs in gold, silver, iron, steel, copper, pinchbeck, or other " mixed metals to be plated with gold and silver." Of these metals the patentee seems to prefer steel. The metal is " either forged, flattened, cut out, rolled, ground, or filed" into the form of a buckle rim; the bridge or middle part is turned "towards the underside;" a "solid hollow body or " bridge" is riveted, brazed, or otherwise secured on the middle of the rim, whereto may be affixed if necessary a chape and tongue; the rim is made red hot or nearly so; it is then hardened by dipping it in any liquid, but by preference in " oil, water, turpentine, butter, grease, with the addition of " salt," and afterwards tempered "by blazing the oil," &c. which remains on it, or "by any gradual or regular heat."

[Printed, 4*d*. No Drawings. *See* Repertory of Arts, vol. 5, p. 19; Rolls Chapel Reports, 6th Report, p. 175.]

A.D. 1786, August 5.—No. 1553.

ASHTON, JOSEPH.—"Casting and making buttons and button " shanks," of any metal or compound of metals. Button shanks (of a shape shown by a woodcut in the Specification) are cast "with a nick or hollow in the stool or leg" thereof. The stool or leg is forced "into a gauge hole made at one end " of a steel chock or hubb cut out for that purpose, and which " at the time of such operation must be turned round by a " lathe or engine." Patterns of button heads are prepared with holes or hollows in the middle of such size as will allow the stools or legs "to go or drop easy into them." The patterns are laid in moulds "with the heads downwards;" the stools or legs are put into the holes, and impressions are taken from the patterns with loam or sand. In performing this operation "the patterns will quit the stools or legs of the " shanks" and "leave the shanks sticking in the loam or " sand." Molten metal is poured into the moulds, "by which " process the heads or tops of the buttons thus run or cast " will adhere to the shanks, and the buttons will be completely " formed." The shanks must be annealed "before they are " worked or cut down in the chock or hubb."

[Printed, 4*d*. Woodcut. *See* Rolls Chapel Reports, 6th Report, p. 148.]

A.D. 1786, August 5.—No. 1555.

DUDLEY, WILLIAM.—"A buckle chape or fastening for men "and women's shoes, with a new-constructed spring-jointed "plate on which may be fixed any kind of rim, ornament, or "device." The chape of the buckle is made with prongs at one end and with holes drilled through its sides for the admission of a wire which carries a pronged tongue. From one side projects a flat piece of metal having a hole drilled laterally through it "about one quarter of an inch" from the outer end, and carrying "a cutter standing erect about a quarter of "an inch" high and midway between the hole and the outer end.

The spring-jointed plate is somewhat bottle-shaped; the small end passes through one side of the buckle rim; the broad end is turned down to receive screws or rivets which fasten it to the opposite side of the rim. From about the middle to the broad end the plate is slotted, and a flat spring screwed to the plate fits into the slot. Near the broad end are two cheeks drilled for the reception of a wire which connects the projecting part of the chape to the plate.

When the chape and the plate are connected, the action is similar to that of a blade "against the spring in the handle of "a clasped knife," the cutter passing through a slot in the spring.

The chape may be made double, and the attachment of the broad end of the plate to the rim may be modified.

[Printed, 6*d*. Drawing. *See* Rolls Chapel Reports, 6th Report, p. 174.]

A.D. 1786, November 9.—No. 1572.

CLAY, HENRY.—"A new method of manufacturing buttons of "dyed materials not before used for that purpose." The materials are silk, cotton, flax, hemp, wool, in their raw state, all kinds of rags and stuffs, or any others which are commonly used for making paper; they are ground or beaten to a pulp; they may be dyed of any colour before or after being reduced to pulp. The pulp is mixed with a paste made of glue and wheat flour, or isinglass, gum Arabic, or any other strong gum, adding at the same time a small portion of linseed oil or other drying oil. The compound is moulded into plates, and "the "superfluous part of the dyed pulp" is worked out by laying the plates between pieces of flannel or cloth and pressing or rolling. The plates are dried in a stove and are then cut into round or other shaped pieces; a shank of metal is inserted into each piece, and the pieces are pressed in a die into buttons "in "the same manner as the common horn buttons." If the colour is not perfect, the button is to be put "into the liquor "of the dye."

"As the heat required to fix-in the shank is very considerable," finer colours may be injured; in such case the button should be pressed sufficiently to make the shank fast; a thin piece of the dyed material should be glued on to it, and suitable pressure should be applied. "The button, after then fringing "off the superfluous part, is complete and fit for sale."

[Printed, 4*d*. No Drawings. *See* Rolls Chapel Reports, 6th Report, p. 175.]

A.D. 1786, December 14.—No. 1576.

WESTWOOD, Obadiah.—"Making tea and other trays, "waiters, card pans, caddees, dressing boxes, bottle stands, "ink stands, coat, breast, vest, sleeve, and other buttons, "frames for pictures, looking glasses, and other things, "mouldings, cornices, and ornaments for rooms, ceilings, "chimney pieces, doors, pannels, and various other purposes." These articles are made from ground rags, remnants of linen, cotton, silk, ropes, cloth, &c. &c., mixed with a strong paste of glue or isinglass, flour, and water, with the addition of a small quantity of resin, oil, Spanish brown, red lead, umber, "or other binding articles." The whole is kneaded together until it is of a consistency fit to be moulded into large flat pieces or to be made into various forms by hand. The pieces are dried in a stove, cut into shapes suitable to the articles which they are intended to make, and pressed in heated dies with designs engraven thereon.

Pieces designed for buttons have shanks fixed in them "while in a relaxed state," or a hole is afterwards drilled in them for the insertion of a shank. The buttons receive several coats of varnish, and are then ready for polishing, painting, gilding, inlaying, or otherwise ornamenting.

[Printed, 4*d*. No Drawings.]

A.D. 1787, January 15.—No. 1582.

RABONE, Joseph.—"A new method of making and manu-" facturing coat and waistcoat buttons of black or any other " colour or mixture of colours, both plain and figured, out of " or from bone and ivory." Pieces of ivory or bone are sawn into flat blanks which are afterwards cut or turned into shapes for buttons. Shanks of metal are inserted "by turning or " counterturning with a hook tool in a common lathe the " under side of the buttons in such a manner that the shanks " being turned concave at the ends and made thin at the edges " will by being hammered or otherwise properly forced or " pressed into the buttons become perfectly fast." Or a hole may be drilled through the middle of the shaped blank, and a suitably formed metal shank be fixed therein.

Before or after the shanks are fixed, the buttons are warped as much as possible by moderate heat in a stove; they are then ground or turned flat, varnished several times with oil, spirits, or other varnish, and (when the varnish is hard) polished, "variously figured and ornamented ad infinitum."

[Printed, 4*d*. No Drawings. *See* Rolls Chapel Reports, 6th Report, p. 178.]

A.D. 1787, February 1.—No. 1586.

HICKMAN, Robert.—"A new method of making and manu-" facturing gilt and plated coat and waistcoat buttons, by " uniting or amalgamating with or by means of tin, or tin and " lead, mixed gilt and plated metal button shells, both " coloured, plain, and figured, with bottoms of copper, brass, " iron, mixed and compound metals." The shanks may be fixed to the bottoms either before or after uniting the shells and bottoms; they are fixed as in other metal buttons. The bottoms are fixed to the shells. "The shank side of the " bottoms" is covered with a mixture of glue and whiting "to " prevent the tin adhering to it." The other side of the bottoms is covered with a mixture of tin and sal ammoniac. The bottoms are put while hot into cold water to get off the sal ammoniac; they are then put with the shanks uppermost " upon a plate of iron over a stove." The shells are placed likewise upon the plate; a small quantity of sal ammoniac is put into them; a quantity of melted tin or tin and lead mixed

" sufficient to cover the whole surface of each button " is poured into them, and the bottoms are slided on to them, " by " which means the bottoms and shells become united and " amalgamated."

The buttons are stamped into shape (and inlaid if required) by putting them " under a stamp in clams or split dies, in " each of which there is a cavity to receive the shanks." They are then put into a press " to take off the superfluous metal " from their edges," and are afterwards turned in a lathe to " take out the marks which stamping in clams or split dies " gives them." The buttons may now " be pierced or not ;" they are afterwards to be burnished, chased, and variously ornamented.

[Printed, 4*d.* No Drawings. *See* Rolls Chapel Reports, 6th Report, p. 178.]

A.D. 1787, September 17.—No. 1621.

ROSE, JOHN.—" Preparing steel and ornamenting the same in " the several articles of steel buttons, buckles, sword hilts, " toys, and other steel work."

[No Specification enrolled.]

A.D. 1787, October 30.—No. 1624.

ALSTON, JAMES.—" A new manner of making buttons of iron " or steel, covered with tin and other metal or tin alone." The metal is rolled to a suitable thickness with a smooth surface and is freed from scale. Blanks are cut out, and the burr or rag left on the lower edge is taken off, and the edges are rounded with a file whilst the blank is revolving in an edging lathe. The shanks are soldered to the bottom of the blank or screwed or riveted in. Buttons " intended to be stampt or " pressed when tinned " are put into a vessel in layers of pounded wood, charcoal, coal, coke, bone or sawdust ; they are covered close over with clay and annealed, taking care that the heat used does not injure the shanks ; they are gradually cooled, and when quite cold are shaken in a box or bag and then put into a weak acid pickle. If the buttons require it, they are scoured with sand and water ; they are then kept in water or lime water, ready for tinning.

The tinning process :—The buttons having been dipped in a solution of sal-ammoniac are drawn whilst wet through pounded resin, and are put into a perforated iron box. The box is gradually immersed into melted tin and moved about until the buttons are completely coated; they are then taken out, and the superfluous tin is beaten off. Any other expeditious method of tinning may be adopted, provided the buttons are left "with a clear smooth surface without knots or in-"equalities." After the tinning, the buttons "are imme-"diately put into hot water until the tin upon them becomes "fixed;" they are then shaken in hot sawdust or bran, and if necessary are further cleaned. They receive an impression or device in a press or stamp, the bottom die having a recess to receive the shank.

Cast iron previously annealed may be made into buttons by casting the metal of the desired pattern and ornamenting it "with the turning engine" or by engraving.

[Printed, 4*d*. No Drawings. *See* Rolls Chapel Reports, 6th Report, p. 178.]

A.D. 1787, November 22.—No. 1630.

PICKERING, John.—"An entirely new and particular kind "of machine or engine, called by me the detector or pocket "spring for preventing the pocket being picked." This pocket protector is made of any metal; it consists of two sides, which open by means of four hinges, namely, one at each end and one in the middle of each side; it keeps itself close "by "the force of two steel springs at the back, which have sliding "rivets through the metal." It is lined with leather; it is covered on the outside with tape which is sewn on to it through holes made along the edges; and it is sewn on to "the outside "of the pocket under the cloth."

[Printed, 6*d*. Drawing.]

A.D. 1788, June 30.—No. 1654.

TYLEE, James.—"A shoe, slipper, and buckle to be affixed "thereto and worn therewith, on a new construction." The inside works of the shoe buckle are "two chapes fixed in "the rim at an equal distance from the centre, which "operate with a purchase;" on the extremity of one are "three teeth pointing to the centre and two from it, and three "near the middle pointing to the centre;" in the other are

" three teeth pointing to the centre, with a sloped hole to " receive a catch in the outside strap."

In the slipper buckle a bar, "round upon the upper part " and hollow under," is "fixed in the centre of each bridge;" on the under part is "a slide spring with one catch and a " stop that fastens in a box in a frame formed and calculated " to answer the purpose of two chapes with holes to fasten " the quarter strings and a cushion to." Two stops on the inside of the rim prevent the strap from springing out.

[Printed, 4*d*. No Drawings. *See* Rolls Chapel Reports, 6th Report, p. 178.]

A.D. 1788, June 30.—No. 1655.

STEDMAN, John.—"A buckle chape or fastening for men " and women's shoes." The "double chape" of this buckle is connected to the rim part by a butt joint so that the rim can be shut down on the chape or raised from it. The chape is made with a bar which projects on each side; and the bar carries a spring at its outer end and the middle portion of the joint at its inner end. The rim or ornamental part of the buckle is made with a cross bar carrying a catch at its outer end, the other portions of the joint at its inner end, and near the inner end a spring "to throw open the rim or ornament " from the double chape" and "to keep the false strap in." The latter object is effected by means of a pin riveted to the spring at the end nearest the joint, and, when the buckle is shut, passing through a hole in the cross bar and running into the strap.

To apply this buckle, it is to be opened; the double chape is to be fastened to the straps of the shoe; and the rim is to be shut down on the chape. A knob on the spring at the outer end of the chape cross bar facilitates the opening of the buckle.

[Printed, 10*d*. Drawing.]

A.D. 1788, August 15.—No. 1665.

JUKES, Joseph.—"An entire new-constructed fastening for " boots, shoes, knee bands, and other purposes, to be used " instead of buckles." A screw is fixed in the middle of a plate; it passes through a hole in the strap or straps of the article to be fastened, after which a rim or ornament with a hole in the middle "is placed so as to receive the screw "through such hole;" an ornamental nut screwed on to the top completes the fastening. There should be several holes in the strap or straps so that the fastening may be varied as required.

If the ornament is in the shape of a buckle "or otherwise "open in the middle," a cross bar must be added for making the central hold therein. There may be more than one screw and nut.

[Printed, 4*d*. No Drawings.]

A.D. 1789, May 2.—No. 1679.

HANDS, Samuel. — "New-invented spring shoe buckles." This invention consists of a spring which may be made "in a "variety of forms, with few or many returns or doubles." A single spring is shaped somewhat like a horse shoe with the ends turned up higher than the middle portion. In a double spring there is a joint at the bottom of the inner returns and a lock or catch near the top. The outer portions terminate either with prongs or with turned down ends "to "hook over the straps of the shoe."

The lock consists merely of "a bolt and spring to make it "act;" it is riveted to one side and receives a hook catch on the other side. The catch has one end secured round one side, its other end hooking round the other side.

An ornament may be worn with the spring; under it is fixed a slider "just wide enough to receive into it the middle "part" of the spring. Or the ornament may be jointed to the spring and be closed down on it by a catch.

[Printed, 6*d*. Drawing. *See* Rolls Chapel Reports, 6th Report, p. 180.]

A.D. 1789, July 2.—No. 1690.

FREETH, Thomas.—"A new chape and fastening for "buckles." A bar is let into or fastened to one of the bridges of the buckle rim. The bar carries a moveable spring button which locks and unlocks the chape. To the opposite bridge is fixed a joint, to which is jointed one end of the wire that runs through the chape. On the jointed end of the wire is a collar "to prevent the chape slipping any lower;" on the other end is a loop which catches on to the button. A bar or plate runs across the rim from bridge to bridge; space is left "under the " bar and the rim of the buckle" to admit "a false strap to go " between." The bar or plate carries a spring "which forces " up the chape when unlocked." The chape "commonly " called a double chape" is capable of turning "quite round " on the wire."

[Printed, 6*d*. Drawing.]

A.D. 1789, August 29.—No. 1700.

ELIN, John.—"An improvement to shoe buckles." A thin bar of metal is fixed across the rim of the buckle "under that " side opposite to where the tongue of the chape points and " parallel with the wire of the chape;" it carries one or more small points "whose direction is from the center of the buckle." The bar is fixed at such a distance under the rim as to admit the thickness of a shoe strap between them.

When the shoe is buckled, the free end of the strap is drawn through between the rim and the bar, and "it then requires " to be tucked under the bar and forced upon the points." The pressure of the buckle upon the foot "effectually prevents " the strap from flying out."

[Printed, 6*d*. Drawing. *See* Rolls Chapel Reports, 6th Report p. 180.]

A.D. 1789, December 8.—No. 1715.

MAXWELL, John.—"Spring fastenings for shoe buckles." The chape bar extends on each side; one end has a hole drilled through it, the other has a catch riveted to it.

The plate "on which the whole depends" is screwed at each end to the buckle rim; it is mortised at its narrow end, and the cheeks of the mortise are drilled to receive the pin which connects the chape bar to it. On the plate are riveted a "strap spring," which "lies in the mortise," a "latch," and a "latch spring." The broad end of the plate "is turned up " square," and through the square part "is a hole to receive " the steady pin at the broad end of the latch spring," also " an oblong hole for the latch to pass through and move in." Two guides, "turned down to a proper distance," receive and guide the catch.

The patentee describes the order in which the parts are to be put together as well as the action of the buckle.

[Printed, 6*d*. Drawing. *See* Rolls Chapel Reports, 6th Report, p. 181.]

A.D. 1790, January 23.—No. 1726.

LAW, Richard. — "An improved method of making shoe "buckles and chapes." The buckle rim and the chape are detached from each other. The chape is made with a bridge which "leaves a vacancy to admit the inside strap of a shoe "between the chape and bridge." Upon the bridge is a spring riveted or screwed to it.

Across the buckle rim (at or near the middle) is secured a slide, which "may be made to act with a joint or swivel at one "end thereof." The slide has a groove in the under side; at the end of the groove a hole is drilled through it to admit the spring "to slide along till the end of such spring drops into "the said hole" and "effectually fastens or secures the "buckle rim."

A spring fastened to the slide has at its free end a spike "that secures a leather or any other strap by means of the "top part of the bridge sliding upon such spring and pressing "the said pillar or spike against the strap, which confines it "against the under part of the buckle rim." Or the strap may be secured "by means of a screw passing through the "slide."

[Printed, 6*d*. Drawing. *See* Rolls Chapel Reports, 6th Report, p. 183.]

A.D. 1790, February 23.—No. 1727.

HANDS, Samuel. — "Method of ornamenting all kinds of "buckles, straps, coaches, chaises, phaetons, harness, and "accoutrements, of leather or paper, used by man or horse." The ornaments, whether of metal or pearl, ivory, glass, or other substance, are inlaid by cutting, drilling, chasing, or pressing. Such as are inlaid by the first three processes are fixed to the article with cement. Such as require pressing are attached with a glutinous substance, rivet, screw, or other fastening; the whole is put into a suitable pair of moulds; the article is softened by heating the moulds with water or steam; and the moulds are pressed together until the ornament is fast.

Any kind of ornamentation may be stamped, sunk, or engraved in the moulds. Horn or any kind of pulp may be inlaid by similar processes.

[Printed, 4*d*. No Drawings. *See* Rolls Chapel Reports, 6th Report, p. 183.]

A.D. 1790, February 23.—No. 1729.

CLAY, Henry.—"A new method of manufacturing buttons "of a material not before used for that purpose." A piece of "slate or slit stone" is turned, ground, cut, or filed into the shape of a button, leaving a recess in the top for the knot or tied ends of "catgut, silk, wire, or other material" which is passed through one or more holes drilled through the slate or stone. Another piece of slate or stone (with or without a recess) is cemented to the top of the former piece, and the button is finished off in a lathe or by grinding, &c.

If a metal shank is preferred, it is passed through the pieces, leaving a metal stud or other ornament on the top. Or the ends of the shank may be beaten flat on a piece of wood, leather, or other material inserted between the two pieces of slate or stone.

The buttons may be engraved, painted, japanned, or otherwise ornamented.

[Printed, 4*d.* No Drawings. *See* Repertory of Arts, vol. 12, p. 241.]

A.D. 1790, April 1.—No. 1741.

TYLEE, James.—"New fastenings for shoe, knee, boot, and "other buckles." The sheet of drawings annexed to the Specification shows nine varieties of buckles and two crooks.

The first is composed of (1) a frame with holes "pierced at "the outside of the spikes" and with two cross bars; (2) "a supporter" brazed or tenoned on each bar; (3) a spring "with a small ridge" on its upper part "placed under the "supporters and riveted to the frame;" it presses up against the under side of the supporters; (4) a bar "with two spikes "at one end and a hole drilled in the middle of the other;" the drilled end "must have a hole pierced in it within the "part that is drilled for room to rivet the wire or pin that "fastens it to the bridge;" there must be a ridge on the bar and a groove "on each side deep enough to receive and slide "on the level of the supporters;" the ridge must be "regularly notched," and the notches "must be cut upright to "that end of the bar that rivets and regularly sloped to that "end with the spikes, and turned a little round at the outsides "so as to stop and slide over the ridge on the spring."

The second consists of (1) a frame with two bars crossing it, "raised a quarter of an inch above the level" of the frame, and cut across in notches; (2) a spring fixed in the space between the bars and riveted to the frame; (3) a bar "fastened "to the bridge," having a ridge "across the middle," and a hole pierced through it "for the spring to slide in."

In the third the chape is jointed to a bar which crosses the frame. On the side of the chape opposite the joint is a piece which partially encloses and covers "a slope spring." The cross bar carries a stud so placed "that when the buckle is "closed it falls into the space before the spring."

The fourth comprises (1) a rim; (2) a support which must be made about the sixteenth of an inch "lower than the rim, "and must be about an inch distance from the rim at one side "and about the eighth of an inch at the other;" (3) two cross bars carrying spikes whose points face each other; they are riveted under opposite sides of the support; (4) a spring (a piece of thin polished steel) riveted to one of the bars "on the upper side and as near the middle as possible" so that "the end of the spring may force up against the under "part of the side of the rim."

In the fifth there is only one cross bar which "must be "about the sixteenth part of an inch lower" than the rim. The bar and the rim carry spikes facing each other. A thin polished steel spring is riveted on the upper or under side of the bar "and must force up against the under side of the "rim."

The sixth has not any bridges; it "is stamped perfect in "one die and only requires the anchor to be turned a little "under the bar."

The seventh has a "cover or outside." Raised parts in the cover are drilled to "receive the tube on the chape." The cover and the chape "must be bent much and principally "along the middle;" the anchor is to be "turned a little from "the cover."

The eighth is made with a rim; on one side are two raised parts drilled to receive or make a joint with the tube of the chape; on the other is a part drilled "to receive the turn of "the crook in the fastening," which must be smooth on the upper side "and proportioned to lie in the inside of the "rim."

The ninth is a boot buckle; it carries a stud about the eighth of an inch high; "the cap must project over the pillar "like a box nail, except in the front, where it must be even "and brought to a point, and must be bent to the leg."

The tenth consists of a "crook and strap that fasten the "buckle to a clog or patten;" the strap may be sewn or otherwise fixed on; the spike of the crook is turned round the buckle; the anchor is sewn into the strap.

The point of the crook in the eleventh "is turned."

[Printed, 6*d*. Drawing.]

A.D. 1790, November 16.—No. 1782.

WHITMORE, William.—"A method of making shanks or "eyes for buttons by the application of rollers, presses, and "other implements." Strips of metal of suitable breadth and thickness are passed between rollers which have impressions of the size and form of the shanks cut either wholly in one of them or partly in both. The motion of the rollers is so regulated that the metal receives the form of a button shank while the rollers are revolving. The waste or blank part around and within the shank is afterwards removed by means of a punch and bed fitted into a press or by a punch alone.

[Printed, 4*d*. No Drawings. *See* Rolls Chapel Reports, 6th Report, p. 183.]

A.D. 1791, August 13.—No. 1823.

MACKENZIE, Colin.—"New invented link for a chain, and "a certain way and method of making a chain of such links." A chain made of these links may be used (according to the size of the links) as a "watch chain or for any purpose where "a chain can be used;" it can be lengthened or shortened "by adding or taking away such links without cutting or "breaking any one or more of them."

The link is either of metal or of leather, horsehair, or other elastic substance, according to the intended use of the chain; the length and thickness vary for the same reason. Each end is either pierced with an eye, or bent round, or made into an eye by means of "a pin, stud, or hook." Metal links may be cast in a mould. The piece is bent into an oval or other suitable shape, "keeping the ends apart or distant from each " other according to the degree of spring" which the link is to have.

These links are united by placing a second link in the eyes of the first, a third in the eyes of the second, and so on. If the chain is required "not to spring," the ends of the links are bent close together.

For some purposes the metal links are enclosed in leather or other elastic substance and are secured therein by means of hoops or bands, or of pins or studs fixed in the metal links.

[Printed, 4*d*. No Drawings. *See* Rolls Chapel Reports, 6th Report, p. 184.]

A.D. 1792, September 7.—No. 1908.

SMITH, James.—"An improvement in the construction of " fastenings for shoes and spurs, and which may be applied " to many other purposes where buckles are made use of, as " well as other useful purposes." The patentee makes his fastening from a piece of steel or other metal "capable of " retaining its elasticity." He bends the piece (if required) to the shape intended, hardens it and tempers it. He then affixes to the extremities or sides of the piece the fastenings, which consist of "hooks, points, nobs, holes, or any other contri- " vance of that nature;" or the fastenings may be made "out " of the same piece."

This elastic piece or spring may be of any shape, plain or ornamented, or so contrived "that the ornamental part of any " buckle, ribbon, &c. usually worn may be affixed thereto."

"The use depends on the spring being depressed until the " hooks or other fastenings have got hold, and by its effort " to return to the form in which it is originally made."

[Printed, 6*d*. Drawing.]

A.D. 1792, October 30.—No. 1914.

GUEST, Barnett.—"A method of making and manufacturing " shoes and boots with soles made of common sole leather " prepared by me for that purpose by a particular process;" the shoes and boots "are to be fastened with spring fastenings " of a peculiar construction, so contrived as to cause them to

" sit better and closer on the foot and leg." The buckle consists of a "triangular rim," and "two small buckles affixed " thereto;" it is secured to the upper leather by studs or pins, which pass through holes made in two pieces of leather, " sewed to the top of the upper leather on each side the centre " thereof under the place where the straps usually cross each " other."

In boots the seam behind is left "unclosed from the top to " within about two inches of the heel." Two pieces of sole leather are sewed to the leather where the seam is left unclosed, and are riveted "to a piece of very thin tin or other " metal of about half an inch wide," and "fastened to another " thin piece of tin or other metal of about three-quarters of " an inch wide, placed on the underside of the first-mentioned piece of tin or other metal and sole leather, by a " hinge or fastening." These double pieces of metal "are " cut asunder at right angles in several places," and to each division is fixed a snap, spring, or clasp. The pieces of metal are to be covered with thin leather or cloth to prevent "fretting " the leg."

[Printed, 6*d*. Drawing.]

A.D. 1794, May 17.—No. 1990.

BELL, William.—"New invented buckles and shoe fasten" ings." The "skeleton of the buckle" is a metal plate, rim, or frame. Near to one end is soldered or otherwise fastened " an immovable bar," or "a roller turning upon an axle," or "a loop moveable upon a joint," so as to have a space between the under side of the plate and the bar. A spike (one or more) is cut out of the end of the plate next the bar, or a spike is soldered thereto; or a spike may be fixed to the bar; in either case the point of the spike is "outwards." A hook or catch (one or more) is cut out from or soldered to the opposite end of the plate; it points inwards, or towards the bar end. The upper side of the plate may be ornamented in any manner.

In using this buckle the outside strap of the shoe is introduced between the plate and the bar. The hook having been pressed into the inside strap, the outside strap is drawn until the shoe is sufficiently tightened, when the end of the strap is raised and pressed against the spike at the bar end; the spike penetrates the strap and secures the buckle in its position.

[Printed, 6*d*. Drawing. *See* Repertory of Arts, vol. 1, p. 149.]

A.D. 1794, September 5.—No. 2010.

HEATON, Ralph.—" A machine for making metal shanks " for buttons." Each part of this machine, (and its use) which makes "metal wire hammered shanks for buttons at " one operation," is described in the Specification; but as the patentee requires all the numbers from 1 to 100 and all the letters of the alphabet to explain the different parts, the passage of the wire from its entrance into the machine to its discharge from it in the form of a shank is considered sufficient for an abridgment. The machine is worked "by the turning " of a winch, by the rotation of a wheel, or any other circular " movement."

A piece of wire is put through one of the holes of a guide plate between steel rollers, on the lower of which grooves are turned to receive the wire. The wire passes from the rollers through a tube to a "bottom cutter," across "clams" into which it is forced by a "guide pin." An "upper cutter" bends the wire down between the clams; a hammer "strikes " a blow which flattens the ears of the shank;" and a " discharger is forced forwards and discharges the shank from " the guide pin."

[Printed, 1*s*. 2*d*. Drawings.]

A.D. 1794, September 13.—No. 2011.

ADAMS, Benjamin.—"Shoe catches with spring straps, to " be used with buckle rings of every kind." The buckle or " catchet" ring is of metal, and made in any convenient manner, "leaving spikes or parts in the bottom thereof to " fasten spikes thereto;" there are usually two spikes at each end inclining downwards, "which take hold of the outside of " the straps, and keep the shoe very tight." Some catchets are made with cross bars which carry the spikes.

The spring strap is made of any metal or elastic substance and is covered with leather; its form depends on that of the catchet. It is made to enter a groove or hollow part in the rim of the catchet, either separate or to be hinged to the catchet or to one of the bars permanently or by means of a removable pin.

The spring strap is disengaged from the groove "by the "thumb being applied in a reclining position with pressure "on the spring strap."

The spring strap "may be added to and used with buckles "made with chapes and tongues."

[Printed, 6*d*. Drawing. *See* Rolls Chapel Reports, 6th Report, p. 189.]

A.D. 1799, November 4.—No. 2347.

BELL, James.—"A certain pocket fastening to prevent the "loss of property." The frame of this protector is composed in front of a spring carrying at each end a stud which slides in a slotted plate forming the sides or ends of the front. The back consists of two short plates hinged to the slotted plates and themselves hinged to a middle or back plate. The parts for opening and closing the frame are a bolt having its free end shaped into a hook or staple, a lever "which bears upon "the bolt and unlocks" it, and "a set-off which comes "through the lining of the garment in which it is worn." A ring is jointed to the lever, and "by moving the ring in "either direction" the lever is caused to bear upon the bolt. Sometimes the protector is fastened and opened by means of a button with a screw shank (on the front plate) which screws into a hole in the back plate. Sometimes springs are fastened to the back part to throw the protector open.

A protector for the breeches pocket consists of two plates jointed together at each end and opened and closed by either of the before-described fastenings.

Another protector consists of four or more plates jointed together; these when open form an oblong or square. Either fastening may be used with it.

A protector to be worn by ladies "for the security of their "property" is composed of a front and back plate jointed together at one end. A button with a screw shank carried by the front plate screws into the back plate, and other holes in the back plate admit pins fixed to the inside of the front plate. The protector is fastened to the dress by means of four points or pins on the back plate. This protector may be varied in shape.

[Printed, 6*d*. Drawing. *See* Rolls Chapel Reports, 6th Report, p. 196.]

A.D. 1800, February 1.—No. 2374.

BARNETT, Joseph.—" An improved mode of making buttons " to be used for wearing apparel or for anything else which " may be fastened by buttons." The novelty consists in " fixing two shanks or other fastening on one button on the " under surface thereof, one on each side opposite each other." The blanks may be made of any metal or other material, of any size or shape, and open or not in the middle. The shanks may be made by any of the methods now used, and may be smaller and lighter than usual; they are fixed to the blank at such distance from the edge as may be best adapted to the size and pattern of the button.

The button must be sewn or otherwise secured to the cloth or other substance so that the shanks " may be in a direct line " with the buttonhole."

[Printed, 4*d*. Woodcuts. *See* Repertory of Arts, vol. 8, p. 368.]

A.D. 1801, November 28.—No. 2561.

HALL, George.—" Elastic fastenings for the shoes, and also " for bands, garters, or ornaments for the knees, waist, arms, " neck and head." This fastening is a " plate or frame made " with plate or wire or both;" it may be of any size or shape; with or without a cover; " with or without aperture or apertures through the side or sides or ends in any part of frame " or plate;" with the apertures " in any direction, either in " straight lines, bendy lines, or in any curve or angle;" with or without spikes, studs, or bars in any apertures and placed in any " direction that may be chosen."

The annexed sheet of drawings exhibits several varieties best adapted for narrow straps and bands and several intended for broad straps and bands.

These fastenings are " applicable to all the purposes of " buckles with additional use for narrow bandages or strings " where buckles cannot be applied."

[Printed, 8*d*. Drawing.]

A.D. 1804, December 19.—No. 2801.

HOUGHAM, Solomon.—" Spring clasps for buckles, lockets, " and other ornaments of dress." The patentee describes his invention as applied to a shoe. He binds a piece of steel or other metal "into such form as the instep or foot may require." He screws or rivets to the under side of the piece a "long "spring" terminating at its inner end in two hooks. He then applies across the long spring (near its outer end) a "cross "spring," which he causes "to play under two other rivets or "screws to strengthen and complete the operation of the long "spring." At each extremity of the steel piece he fastens a stud, one of which "forming a box or catch receives the long "spring." Finally, he screws or rivets to the upper surface of the steel piece a mount of gold, silver, or other material.

[Printed, 6*d*. Drawing. *See* Rolls Chapel Reports, 7th Report, p. 189.]

A.D. 1811, October 30.—No. 3501.

DAVIES, Thomas.—"Improvements in the construction of "buckles for various purposes." This buckle consists of a rim and a frame hinged to one side of the rim. The frame carries a longitudinal bar which projects at each end and is provided with "upright studs or points." These studs, when the frame is pressed down on to the rim ("the straps of the "shoe being drawn either tight or slack at the option of the "wearer"), pass through the straps into corresponding holes made in a bar which crosses the rim. A button and spring on the side of the rim opposite the joint holds down the frame and keeps all secure "without the necessity of either tongue or "chape."

[Printed, 6*d*. Drawing. *See* Rolls Chapel Reports, 8th Report, p. 86.]

A.D. 1812, January 25.—No. 3527.

BROWN, John.—"A pocket on an improved construction, to "be used about the person or otherwise." This pocket is "made nearly on the same construction as pockets generally," but it is cased round with rings or links of wire which can be sewed on separately from each other, "so as to prevent a "knife or any other instrument from cutting it through."

The pocket may be closed in various ways, by locks, bolts, screws, loops, or appliances "made by tubes or pipes of metal "or anything fit to slide on a wire" like a telescope.

Sometimes a chain or wire is attached to the top part to prevent the pocket from being cut or torn away.

Some pockets are made with split rings linked together and connected to a frame which opens on two hinges or rivets.

Watch pockets are made in a like manner with the addition of a ring fixed on the top part for the watch chain to hang through.

[Printed, 6*d*. Drawing. *See* Rolls Chapel Reports, 8th Report, p. 89.]

A.D. 1813, November 4.—No. 3748.

SANDERS, Benjamin, the elder.—" A new and improved " manner or method of manufacturing buttons." The tools made use of are (1) "cylinder dies" in which are sunk " cylindrical cavities," each of the diameter of the button to be made, "of such depth as to allow the said button to be " pressed therein considerably," and capable of giving to the face of the button "the figure intended thereon to be produced"; (2) " chargers or conductors" of metal, hard wood, or other material suited to thrust the substances of which the button is made into the dies; they fit into the cylinders and have " a flat face with a central hole therein to admit the shank"; (3) "spindles which are made of metal or other hard material"; each fits " accurately into one of the said cavities in the dies" and enters therein to such a depth " as shall leave a space " equal to that occupied by the button when manufactured," a shoulder preventing it from entering beyond that depth; the face of the spindle which enters the cavity is concave " in order " that the materials of the button may be urged inwards in " the first pressure"; (4) a spindle with a convex or other description of face; this is to be used (if required) " after the " parts of the button have been consolidated" by the first pressure; (5) " counter spindles," which slide in the spindles; they are " small cylinders having a hole in the centre of each " to receive the shank of the button, and having a small motion " (limited by a stop) answering to the thickness of a piece called " the collet."

The materials for the button are (1) a face of cloth or other flexible fabric or of metal " capable of being acted upon by " compression or by a blow"; (2) pieces of paper or like substance impregnated with resinous, glutinous, or other adhesive matter, and gradually diminishing in size according to the form to be given to the button; (3) a centre piece and shank; (4) a collet if required; (5) a tube "to be slipped on the shank in "preference, instead of allowing the shank alone to be opened "above the collet"; (6) a "back spring," which is a helical spring, "interposed between a small plate keyed or pinned "through the shank behind the garment and the garment "itself."

Method of manufacture :—Lay on the face the adhesive paper and the centre piece and shank; press them down in the die by means of the charger; "dispose the collet and tube in "the counter spindle"; put the spindle into the cylinder die, "both spindle and die being previously so heated as to act on "the resinous or like matter"; subject the whole to strong pressure; "by a second pressure on the counter spindle" force down the collet, thereby giving the button its form; take out the button, open the shank, and "take off the gloss of the "face by a slight damping." In certain cases the patentee varies his proceedings.

[Printed, 4*d*. No Drawings. *See* Carpmael's Reports on Patent Cases, vol. 1, p. 515; Rolls Chapel Reports, 8th Report, p. 101.]

A.D. 1820, April 29.—No. 4451.

HANCOCK, THOMAS.—"An application of a certain material "to various articles of dress and other articles, that the same "may be rendered more elastic." The material is caoutchouc cut into slips of suitable length and thickness. If the quality of the caoutchouc "is not the best," or if the spring "is not "required to be very substantial," the slips are steeped awhile in hot water "to prevent their cracking on the edges."

The slips are usually enclosed in cases "made as long as it "is necessary the spring should stretch," and fastened thereto at the extremities. The cases may be separate or made in the article to which the spring is to be applied.

These springs are applicable to wrists of gloves, vests, waistbands, wrists of sleeves, mouths of pockets, knees of breeches and drawers, braces, trouser and gaiter straps, shirt-wrists, stiffeners for neckcloths, stockings, garters, and stays; they may be used also instead of ties for boots, shoes, clogs, and pattens.

[Printed, 4*d*. No Drawings. *See* Repertory of Arts, vol. 40 (*second series*), p. 14; London Journal (*Newton's*), vol. 2, p. 7; Webster's Reports, vol. 1 p. 500 (*note*).]

A.D. 1824, December 23.—No. 5062.

DEYKIN, James, and DEYKIN, William Henry.—"An "improvement in the manufacture of certain military, naval, "and other uniform and livery buttons." The blanks are cut or formed and annealed in the usual manner. The shanks are then soldered to the blanks as near to the middle as possible, and "then the scale is removed by an acid or acids, or the button "cleaned in the usual way." The button is next placed on a split die, or a die with a hole in it to admit the shank, and is struck with a hammer or upper die, on which the device or impression is engraved. The button is afterwards "clipped, "edged, slightly cleaned (if any impurity adhere to it), gilded "(if intended to be gilded) and finished in the usual way."

If the metal (intended to be gilded) "prove hard, or crack, "or for any other cause require to be annealed again," after soldering on the shanks, the buttons are to be placed on the lower die and to be "partly or imperfectly struck"; they are then to be annealed "in close boxes of copper or other metal "to prevent the accession of air, which might cause the "soldering of the shank to give way." The buttons are then to be cleaned with acid, to be placed again on the lower die, to be struck with the upper die to complete the impression, and finally to be finished as before-mentioned.

The patentees describe another process, but they do not consider it "near so perfect as that above described."

[Printed, 4*d*. No Drawings. *See* London Journal (*Newton's*), vol. 11. p. 186.]

A.D. 1825, October 13.—No. 5264.

SANDERS, Benjamin.—"Improvements in constructing or "making of buttons." This invention differs from the one for which the patentee obtained Letters Patent dated November 4th, 1813, No. 3748, in as much as soft and flexible materials are substituted for the metal shanks.

The apparatus employed is the same, namely, a cylindrical mould or die, a charger or forcer, a steel hollow cylinder (termed a spindle in the former Specification), and a solid steel cylinder; there is now added a steel hook for removing the button from the mould.

The materials also are the same excepting the shank, namely, *a circular* piece of cloth or other flexible fabric for the face and edge; pieces of paper impregnated with resinous or other adhesive matter, a piece of metal carrying the shank, and a collet.

The shank-carrier is made "with four slits in it"; the pieces are "raised or cupped in their centres," and some soft and "flexible substance is wound around, through, or over" them, the substance forming the substitute for the metal shank.

The cloth face and edge, the impregnated paper, and the shank-carrier being disposed in order "as nearly as concentric "as may be" are laid on the top of the mould; the charger forces them down to the bottom; the spindle, having "its "mouth below opened to a conical shape" and its edge "as "perfect or sharp as may be," insinuates its edge "all round "behind the outside of the raised portions of the pieces," and when pressure is applied "bends them over at the back "of the intended button"; and the collet "with its circle of "teeth, claws, or points" downwards serves when the final pressure is given to hold the materials together. The collet is introduced into the mould by means of the solid cylinder, which has at its lower end a circular groove for the reception of the collet and a hollow in the centre for the admission of the tuft of soft material.

The patentee describes several methods of making his soft shanks.

[Printed, 8*d*. Drawing. *See* London Journal (*Newton's*), vol. 14, p. 148; Engineers' and Mechanics' Encyclopædia, vol. 1, p. 285; Webster's Reports, vol. 1, p. 75 and 409 (*notes*); Webster's Patent Law, p. 39 (also p. 134, case 99) and Supplement, p. 35; Webster's Letters Patent, p. 35; Carpmael's Reports on Patent Cases, vol. 1, p. 510; Barnewall and Adolphus's Reports, vol. 3, p. 881; Law Journal, (King's Bench) vol. 1, (*new series*), p. 265; Billing on Patents, p. 48.]

A.D. 1825, October 13.—No. 5265.

DWYER, THOMAS.—"Improvements in the manufacture of "buttons." These buttons are made by sewing, netting, or knitting covers of silk, linen, wool, cotton, or other material, or any of them mixed with other materials, on to metal blanks. These blanks may be concave or flat with the edges raised, bent, or turned, so that the one side "shall represent "the basis of the form or shape of the buttons intended to be "manufactured," and the other "shall afford accommodation "for the coverings being sewn, netted, or knitted on."

[Printed, 4*d*. No Drawings. *See* London Journal (*Newton's*), vol. 11, p. 361.]

A.D. 1826, July 14.—No. 5386.

LOWE, Benjamin.—"Improvements in useful and ornamental dressing pins." This invention consists in ornamenting the pins, "particularly in the heads," by riveting, soldering, cementing, or pressing on to them heads of metal, or paste set in metal, "cut and ornamented according to the fancy of the workman."

[Printed, 4d. No Drawings. *See* London Journal (*Newton's*), vol. 12, p.309; Rolls Chapel Reports, 7th Report, p. 126.]

A.D. 1827, December 4.—No. 5577.

TYNDALL, Thomas.—(*A communication.*)—"An improvement in the manufacture of buttons, and in the machinery or apparatus for manufacturing the same." The buttons made by this apparatus are metal buttons and covered buttons, "but with a peculiar sort of shank." The shank is formed "by raising a convexity in the centre of a metallic disc" and piercing holes through the raised portion, so that in sewing the button on the thread passes "through opposite holes parallel to the face of the buttons."

"The four principal roots of action" are seated in the main rotatory shaft of the machine; they are (1) eccentrics for actuating "the upper die or punch box," (2) eccentrics for actuating "the lower die or punch box," (3) a cam near the middle of the shaft for driving five wheels ("which carry the several parts that are intended to constitute the button") through the agency of a curved lever, a pawl, a ratchet wheel, a shaft, and gear work, (4) two cams near the extremities of the main shaft for moving a frame "which carries and feeds in the Florentine or other material" (wound on a roller) whereof the faces of the buttons are made; the movement is effected by means of vertical slides, right-angled levers connected to the slides, pawls, and horizontal ratchets fixed to the frame.

The edge of the material being drawn off the roller and placed between "feeding chaps," the material is advanced "about an inch and half" beyond the chaps on to a "feeding board," and the edge is "introduced into a narrow slit" under a circular cutter or shears. A disc of Florentine having been cut out by the cutter is "deposited in the chambered "ring" of one of the wheels "for the purpose of being con-"veyed into the space between" two of the other wheels, "there to be united to the shell, which shell is at the same "time brought immediately over it" by one of these two wheels.

The shell, having been previously placed by hand in a "rabetted tube or drawing block," undergoes the operation of "drawing through" by a descending punch "and is thereby "deposited in the corresponding cylindrical hole" of the other of the two wheels; the rotation of this wheel transfers it thence to meet the disc of Florentine.

The shank "must be deposited in an elastic tube," where a descending punch "pushes it down into the corresponding "hole" of the fourth wheel, and the rotation of this conveys it to the other of the two before-mentioned wheels to be united in the lowest wheel with the shell and its covering. The shank-piece, when pushed down into the hole of the wheel, "is pierced with four small holes by punches fixed in the upper die; the next movement of the wheel brings it so that by means of dies the holes are countersunk, and the central part is raised; the next movement brings it "where the dies "pinching it raise the centre still higher and round the "metal between the holes"; by the next movement the last-described operation is repeated and the shank is completed; the next movement brings the shank "immediately over the "shell." Here on the approach of other dies "the edge of "the Florentine is gathered in over the edge of the shell by "a small apparatus" (described in the Specification), "and "the shank-piece is introduced into the recess at the back "part of the shell, carrying in the edges of the Florentine "before it."

All the parts of the machine (and the use and action thereof) are described at length in the Specification.

In the manufacture of shell buttons made entirely of metal "these will require no other alteration in the machine than "the omission of those parts" which relate to the feeding and conducting of the Florentine.

[Printed, 1*s*. 4*d*. Drawings. *See* London Journal (*Newton's*), vol. 3, (*second series*), p. 126; Rolls Chapel Reports, 7th Report, p. 126.]

A.D. 1829, March 26.—No. 5777.

CHURCH, William.—"Improvements in buttons and in the "machinery or apparatus for manufacturing the same." The improvements consist "in certain variations from and "additions to" the invention for which Thomas Tyndall obtained Letters Patent, dated December 4th, 1827, No. 5577; they are (1) the mechanism and method by which the shells are prepared; (2) the machinery for forming the shanks; (3) the contrivance for conducting the Florentine or other material for covering the face into the machine; (4) the apparatus for gathering in the edges of the Florentine over the shell previously to attaching the shank; (5) the mode by which the wheels are driven that carry the several parts of the button for forming it and putting it together.

1. Two clams mounted "on the top of a sliding standard" hold the metal from which the shells are cut. The metal "passes through the slit" of a punch box; a cylindrical tube of steel depressed by a lever punches out a disc against a lower cutter and forces the disc into a recess therein; and a plunger within the tube pushes the disc through the recess, thereby turning up its edges, and deposits it in one of the recesses of a carrying wheel.

2. Other clams hold the metal; the discs (which are not quite so large as those for the shells) "are cut and drawn "through by similar means to those last described." These discs also are "deposited in one of the carrier wheels." Suitably arranged dies, nippers, and punches complete the shank.

3. On the main horizontal shaft is fixed a bevel wheel which takes into a similar wheel at the lower end of a vertical shaft at whose upper extremity is a crank. From the vertical shaft "arises the impelling power which actuates the carriages "that feed in the materials of which the button is to be "constituted." The rotation of the crank sets in motion "the several racks, pinions, and catches connected with "the feeding apparatus" and "lying on the table of the "machine."

4. Two thin plates of steel slide on each other; they are mounted in frames and placed between "the two central

" carrier wheels." In this invention two wheels " more than " in the former invention " are employed. " A peculiarly " formed hole is made in each plate, the ends of each hole " being made semicircular but of different diameters "; when the plates are slidden in one direction " a circular aperture of " about an inch " is formed, and when in the opposite direction the aperture is contracted. The shell with the disc of Florentine beneath it is " driven into one of the holes of the " lower carrier wheel," whereby the edges of the Florentine are thrown up round the shell; " being thus enclosed within " the wheel they are conveyed under the aperture of the " gatherers, where by the next operation of the lower punch " they are raised up, and the edges of the Florentine brought " through the gatherers"; these are then drawn so as to contract the hole and bring the edges of the Florentine into a smaller compass. At this time the punch with the shank descends upon the gatherers, and " the aperture of the " gatherers now opening allows the shank to be pressed into " the hollow shell, carrying the edges of the Florentine " with it."

5. The carrier wheels " are mounted on vertical shafts and " driven by toothed gear below." The Specification contains a full explanation of the whole of the mechanism employed.

[Printed, 1*s.* 4*d.* Drawings. *See* London Journal (*Newton's*), vol. 5, (*second series*), p. 249; Register of Arts and Sciences, vol. 4 (*new series*), p. 123; Rolls Chapel Reports, 7th Report, p. 129.]

A.D. 1831, August 30.—No. 6155.

AINGWORTH, Benjamin.—" An improvement in the making and constructing of buttons." These buttons have instead of a metal shank " a strong covering composed of threads of " silk, flax, or worsted, or other suitable material woven into " a tissue of cloth ;" they differ from those made according to the patents of Mr. Sanders in that " there is no metal " collet at the back, but the woven back extends over all the " central part of the back of the bottom and reaches towards " the circumference thereof." This woven back is cut circular and rather larger than the intended button; it is fastened in its place by a circular metal blank which the patentee calls " the internal metal back." This back is of less size than the button and " may if required have a small depression

" sunk in the centre;" when in its place it occupies the interior of the finished button behind the woven back. Circular pieces of paper are to be interposed between the metal and the woven back "in order to give some prominence " to the woven back," and if the pieces of paper are perforated in the middle, the woven back "may have a depression at " the centre." The edge of the woven back is turned over the edges of the metal back and the pieces of paper, and the woven back is fastened in its place "by an attachment which " is made all around the outer circumference of the back of " the button." The attachment is made by the circumference " being overlapped by the raised edge of a metal shell," whose face may be covered with any suitable material "according to the appearance that the face of the button is required " to exhibit."

The patentee describes the moulds employed for forming the button, the tools for charging the moulds, the finishing dies "for consolidating the button," and the press for giving the required pressure to the moulds and dies, adding that " they are not newly invented implements."

[Printed, 1*s.* 2*d.* Drawings. *See* Repertory of Arts, vol. 13 (*third series*), p. 200, and vol. 2 (*new series*), p. 17; London Journal (*Newton's*), vol, 6, (*conjoined series*), p. 282; Register of Arts and Sciences, vol. 7 (*new series*), p. 80.]

A.D. 1831, October 7.—No. 6177.

CHRISTOPHERS, JOHN.—"An improvement in clothes buttons." These buttons are made "with shanks of a peculiar " kind to be permanently united to washers;" they may be made in either of the following ways, the heads being of any suitable material and of any required shape :—

1. A metal shank (without an eye) is secured to the head; the shank stem is passed through a hole in the article to which the button is to be attached; a washer having a hole in the middle is passed over the outer end of the stem, and the end of the stem is riveted to the washer.

2. The shank is "perforated with a small hole up its centre " in the manner of a tube;" the washer has a pin projecting from its middle; the pin is hammered tightly into the tube of the shank. Or the hole in the shank may be continued up through the head of the button, and the end of the pin may be riveted thereon, with or without an ornamental device.

3. The shank may be secured to the washer; the head may be perforated for the passage of the end of the shank stem; or the head may have a pin fixed to it, which pin is to be hammered into a tubular shank carried by the washer.

If it is desirable that the button should not turn round after being attached to the article, the washer may be pierced with holes for sewing it to the article.

The annexed sheet of drawings exhibits two "short steel "bodkins" for facilitating the insertion of the shank stems through the material of the article.

[Printed, 6*d*. Drawing. *See* Repertory of Arts, vol. 13 (*third series*), p. 335; London Journal (*Newton's*), vol. 5 (*conjoined series*), p. 306.]

A.D. 1832, August 3.—No. 6291.

CHRISTOPHERS, John.—"Improvements in clothes but-"tons." The patentee considers this invention to be an improvement on the one for which he obtained Letters Patent dated October 7th, 1831, No. 6177. He describes two methods of making buttons, the second "particularly applicable to "clothes which are washed:"—

1. The shank is hollow and of malleable metal; slits are cut in it near the outer end; when the stem is passed through the article to which the button is to be attached, the slit parts are bent outwards to a right angle, thereby forming a substitute for the washer mentioned in the former invention. The instrument, used by the patentee for turning back the split parts, "consists of two chaps and two limbs acting as a pair "of pliers." In the inner edges of the chaps are "two "semicircular gaps forming a circular aperture." This aperture holds the stem (after the stem is passed through the article) below the slits, and a hammer forces the slit parts "level on the face of of the chaps."

2. The shank is a tube having the hole at the outer end contracted; a spring catch "having two halves of a disc or "washer" soldered or otherwise fixed to it takes into the tube of the shank.

[Printed, 6*d*. Drawing. *See* Repertory of Arts, vol. 15 (*third series*), p. 146; London Journal (*Newton's*), vol. 5 (*conjoined series*), p. 308.]

A.D. 1832, August 15.—No. 6296.

INGRAM, Thomas Wells.—"An improved method of manu-"facturing a certain description of buttons by the application

" of machinery not heretofore used for that purpose." This invention is applicable to such buttons as are made of horn, hoof, or any substance or composition " requiring considerable " and continued pressure for the purpose of giving them the " required form," &c.

The apparatus used consists of (1) a base having a metal frame thereon; (2) a table or bed moveable between the sides of the frame; (3) two pieces called "extensors," the lower extremity of the one resting in a channel in the lower part of the frame and the corresponding extremity of the other entering a channel under the table; (4) a pin to connect the extensors; (5) a roller moving freely on the pin and between the extensors; (6) a cam on a shaft which revolves between the sides of the frame; (7) a lever on the side of the frame opposite to the cam; (8) gear connected to the cam shaft for communicating motion.

Blanks of the material of which the buttons are to be made are placed between dies; the dies are laid upon the table; the cam shaft is caused to revolve; the extensors "are forced by " the action of the cam upon the roller into a vertical position;" the table is moved or raised and subjects the dies to pressure between the upper side of the table and the underside of the top of the frame. The lever, " being forced against the roller " on the side opposite the cam," at the same time lowers the table, subjects the extensors again to the action of the " revolving cam, and causes the operation of the machine to be " repeated."

[Printed, 6*d*. Drawing. *See* Repertory of Arts, vol. 15 (*third series*), p. 145; London Journal (*Newton's*), vol. 3 (*conjoined series*), p. 162.]

A.D. 1833, April 4.—No. 6407.

RODGERS, George, and **TATAIN**, John.—" An improved " button." This button is composed of two discs and a shank between them. The larger disc forming the face of the button may be of metal or other material " as it may suit the manu- " facturer." The smaller disc should have holes pierced through it for attaching the button to the garment. The shank is a stem soldered at one end to the larger disc, and threaded at the other end for screwing into the smaller disc. Or the shank may be soldered to the smaller and screw into the larger disc; or it may be made in two pieces, soldered to the discs and screwed to each other.

The shank is passed through a small hole in the garment, and then the smaller disc is screwed on and sewn to the fabric.

[Printed, 6*d*. Drawing. *See* London Journal (*Newton's*), vol. 3 (*conjoined series*), p. 243.]

A.D. 1833, May 4.—No. 6417.

HOLMES, John.—" An improvement in metallic shanks for " buttons." These shanks are " peculiarly shaped elevations " or loops " raised or formed in discs of sheet metal which are intended to constitute the backs of buttons. Or they may be raised in discs which form " the whole substance of some " description of buttons not requiring a plain face." Or they may be made from pieces of sheet metal and be soldered or otherwise attached to the backs of the buttons.

The first-named is the one preferred by the patentee; it is formed " by partially cutting and raising or forcing up a " portion of the metal disc ;" this portion is then compressed by the action of punches and dies " so as to have a rounded " figure on the inside of the top part," and the edges are turned so as to prevent their cutting the thread by which the button is fastened to the garment. There is only one passage for the thread, and this " being rounded on all edges will " cause the threads to keep in the centre of the shank." When the shank is sewn on " it forms in conjunction with the threads " a round attachment, thereby preventing the shank from " cutting or wearing the buttonhole."

In other shanks the cut through the disc is effected by a " parallel rib on the die and corresponding groove in the " shaping punch."

In others, the separation of the sides of the loop is obtained by " straight edges in both punch and die."

In others, intended for buttons of pearl, shell, horn, &c., the shank is formed with a "dish-shaped back" to be pressed into a dove-tailed recess cut in the back of the button.

Other shaped shanks are described in the Specification, the loop in all cases being the same as the one first-mentioned.

The patentee describes the punches and dies and the machinery which he employs in the manufacture of his improved shanks, but he does not confine himself thereto, as the shanks may be made by means of any other suitable tools and apparatus.

[Printed, 1*s*. 10*d*. Drawings. *See* London Journal (*Newton's*), vol. 3 (*conjoined series*), p. 69 ; Rolls Chapel Reports, 7th Report, p. 142.]

A.D 1834, July 10.—No. 6641.

ASTON, John.—"An improvement in the manufacture or "construction of buttons." The buttons to which this invention applies are those "commonly called flexible shanks," wherein a tuft of thread or woven fabric is made to protrude through a collet. The improvements consist in making the collet with "an oblong hole," and in laying the tuft (with a soft substance or padding below it) "across the short axes of "such oblong hole," so that it does not protrude, and thus admits of the button "being set more closely to the cloth" to which it is attached. In sewing the button on the needle is passed under the tuft "in the direction of the length of the "hole of the collet." The padding lies under the collet, and has the thread or woven fabric wound round it; it "consists of several layers of soft paper having a piece of silk "or other fabric similar to the covering of the button;" this piece forms "the surface which comes in contact with the face "of the garment to which the button is attached."

The patentee describes the process of fastening the parts of the button together by means of dies or moulds and a hollow tool by which the edges of the covering are gathered together and laid over the edges of the shell, adding that he does not lay any claim "to any of the tools or dies or parts of the "button," as they are "similar to those heretofore used in "making like kinds of buttons."

[Printed, 8*d*. Drawing. *See* Repertory of Arts, vol. 3 (*new series*), p. 317; London Journal (*Newton's*), vol. 6 (*conjoined series*), p. 284.]

A.D. 1835, February 16.—No. 6767.

BURRELL, Samuel.—"An improved method of manufac-"turing buttons for clothes." These buttons are those commonly called "Florentine buttons;" the shanks may be "either cloth or metallic shanks;" and the improved method consists in uniting the several parts (1) by means of "a soft "metal rivet in the centre," or (2) "by a compressed bow "shank."

1. The front disc is pierced with a hole in its centre, and the edge of the hole is countersunk. A cylindrical plug of lead or other soft metal is inserted through the hole, and one end thereof is riveted "flush with its face." The back disc is "dished and countersunk and perforated in the centre." The

flexible or cloth shank is pressed into a raised shape "by a "small countersunk die and round-headed punch." The disc of Florentine is stamped or cut out in any convenient manner.

The Florentine is placed flat in a recess at the top of a die; the front disc (with the plug uppermost) is laid on the Florentine; both are pressed down to the bottom of "the cylindrical "recess" of the die, when the edges of the Florentine will be "puckered round." A closing tool, carrying a back disc having a raised shank placed through the hole in its centre, is forced down into the die; its bevelled edges gather in the edges of the Florentine under the back disc; and a riveting punch spreads out the end of the plug into or over the recess in the back disc, fastens the whole together, and completes the button. The button may if required "be passed to a "flattening die."

2. The shank is of wire and the looped portion oval or elongated. The upper portion is passed through the hole in the front disc, opened and riveted flush with the face. The after process is the same as that before described, the riveting punch having a countersunk recess which meets with the bow of the shank, compresses it, and outspreads its sides into the cup or recess in the back disc.

Discs of thin paper or other substance may be placed between the front disc and the Florentine.

[Printed, 10*d.* Drawing. *See* London Journal (*Newton's*), vol. 8 (*conjoined series*), p. 152; Rolls Chapel Reports, 7th Report, p. 160.]

A.D. 1835, November 28.—No. 6935.

JEFFERIES, HUMPHREY.—"Improvements in buttons." The improvements relate to metallic shanks which are raised out of the metal "intended for the button or button-back," and to such as are made of wire and fastened to the button-blank; the latter are fixed without the use of solder or other matter.

To make a brace button or the under side of a shell button or covered button a disc of metal is formed with a rim on the ridge and a swell on the centre. Two sides of the swell are pierced, and at the same time the edges of the holes are turned "under and not over the shank in such manner as to round "the edges in all parts and avoid cutting the thread or cloth." The edges so turned "should be actually doubled under until

" they touch the under side of the shank and be pressed " against it." If the metal used is iron, it " must be the best " charcoal iron, and it should be annealed during the process."

To make " solid metal buttons " a metal button blank is pierced with " two small square concavities " at proper distances to receive both ends of the shank. A common button shank with its ends turned at right angles to the bow portion and made to fit into the concavities is put (together with the blank) into a shank die, and the top die being pressed or struck down upon it unites the blank and shank together, and at the same time impresses if required any pattern on the button.

[Printed, 6*d*. Drawing. *See* London Journal (*Newton's*), vol. 8 (*conjoined series*), p. 425.]

A.D. 1837, May 4.—No. 7360.

INGRAM, Thomas Wells.—" Improvements in the manu" facture of certain descriptions of buttons and in the tools " used to manufacture the same." The buttons are such as are made of horn or hoof, and the improvement consists in applying flexible shanks to them. The shank is composed of a metal cup with a hole through the middle and a piece of linen or cloth which partially protrudes through the hole and forms the flexible portion. A piece of pasteboard or other protecting substance is placed over the linen or cloth and within the cup, and on this a piece of metal is laid " to resist the pressure " necessarily used in fixing in the shanks and forming and " ornamenting the buttons." A channel is turned in the back of the button blank for the reception of the parts composing the shank; the whole are united " by pressure in the usual " manner."

The improvements in the tools " consist in the method of " making and constructing the dies or moulds wherein the " formation of the button is completed " and the surface is ornamented. Distinct pieces of metal (generally brass) are engraved or otherwise ornamented. These pieces correspond in size with the intended buttons and are accurately fitted into cavities cut in steel or other plates. To facilitate the removal of the pieces from the plates a small hole is made through each cavity, and a piece of metal may be placed underneath each piece to prevent injury in the removal. The pieces when engraved are flat, and "the required degree of concavity" or other shape is afterwards given by stamping or pressing.

[Printed, 4*d.* No Drawings. *See* Repertory of Arts, vol. 9 (*new series*), p. 49.]

A.D 1837, December 14.—No. 7508.

ELLIOTT, William.—"Improvements in the manufacture of "covered buttons" made with flexible shanks. This invention relates particularly to the covering of the face of the button, "without reference to the modes of making flexible "shanks and without reference to the interior construction of "the button, so long as the buttons are made by the aid of "dies or such like tools and pressure and not covered by hand "with the needle."

The fabric from which the disc covers are cut is woven so that each disc may have a "figure or design in a central "position in respect to the face;" the weaving may be that called "terry weaving" or "brocade weaving;" other "modes "of weaving figured fabrics" may be adopted.

"For ensuring correctness of the cutting of the figured "woven fabric into covers" an apparatus is used consisting of a cylindrical stamp capable of sliding along a pointed rod; the point is to be carefully placed in the centre of the design. Or a pin may be made to slide in the punch of the cutting die of a fly press. The metal shell of the button should be perforated in the centre so that a pin may be passed through it and the centre of the design "during the process of combining the "parts constituting the button;" this pin "will be forced out "by the act of pressing the parts together." Or the dies "may be suitably formed for ensuring a central position" for the design.

[Printed, 8*d.* Drawing. *See* Repertory of Arts, vol. 10 (*new series*), p. 199; vol. 14 (*new series*), pp. 285 and 356; vol. 15 (*new series*), pp. 38, 101, 158; vol. 18 (*new series*), p. 310; London Journal (*Newton's*), vol. 13 (*conjoined series*), p. 81; Mechanics' Magazine, vol. 43, p. 399; Webster's Reports, vol. 1, pp. 220 and 222; Webster's Patent Law, p. 48; Common Bench Reports, vol. 2, p. 446; Law Journal (*common pleas*), vol. 15 (*new series*), 49; Law Times, vol. 6, p. 219; Billing on Patents, p. 64.]

A.D. 1838, April 7.—No. 7609.

BARNETT, George.—"An improved button for protecting "the thread or shank from friction and wear." The patentee fastens to buttons or forms upon or out of them "a hollow

" neck or collar" which protects the threads or flexible shank. In brace or other buttons without a shank and "with any " number of thread holes," the neck or collar "has a bottom " to it through which the thread holes are perforated." The buttons may be made of any material or mixture of materials, and when convenient "an ornament may be placed over the " top of the button."

In flexible shank buttons the neck or collar is made without a bottom, being left open to permit the flexible shank to be drawn through it.

[Printed, 4*d.* No Drawings. *See* Repertory of Arts, vol. 10 (*new series*), p. 44; London Journal (*Newton's*), vol. 14 (*conjoined series*), p. 324.]

A.D. 1838, July 7.—No. 7722.

JAQUIN, Cornelius Alfred.—"Improvements in the manu" facture of buttons," namely, buttons covered with silk or other woven fabrics. The improvement consists in preparing the covering fabric so that it will retain the impression produced on it by embossing. This is effected by the use of shellac dissolved in naptha or spirits of wine, but other preparations may be used; it is preferred (although not essential) that the preparation should be as waterproof as possible.

Discs of fabric are cut out, and on the back of each is applied by means of the preparation a disc of paper of like size. When the preparation is dry, the fabric is ready to receive an impression by the aid of suitable dies. In order to obtain a die in relief more suitable for impressing the fabric it is desirable "so to jag or roughen the under surface of the " punch" that when a circular piece of button board is screwed down into the under die, "it will cause the button " board to attach itself to the punch and become the counter " die" and be less liable to cut than when metal counter dies are employed. The backs of the impressions should be filled-up "with a further quantity of cement such as is above de" scribed," and the fabric is then ready to be applied "to the " covering of buttons by dies and pressure as is well under" stood."

The embossing may be done after the covering fabric, prepared paper or button board, and the other parts of the button are combined by pressure in the usual manner. The button is transferred to another die which is engraved and "heated to " such a degree of heat that the operator can just bear his "hand to rest on it;" this heat together with the pressure employed "will aid the process and cause the cement to "adhere to the outer fabric."

[Printed, 4*d.* No Drawings. *See* Repertory of Arts, vol. 12 (*new series*), p. 293.]

A.D. 1838, August 30.—No. 7785.

BERRY, Miles.—(*A communication.*)—"Improvements in "looms for producing metallic tissues, and also improvements "in such tissues, applicable to the making of buttons, "epaulettes, tassels, and other purposes for which gold and "silver lace or braiding is commonly employed, and to the "making of imitations of jewelery and other fancy articles." The inventor claims the production of tissues "composed "entirely of metal in contradistinction to the ordinary gold "and silver lace." These tissues have "all the variety of "design or pattern and brilliancy of appearance of the finest "figures or brocaded silk or other fabric without their "perishable qualities;" they are capable of being cleaned, cut into any required number of parts, and soldered to each other or to pieces of metal, according to the article to be made.

The improvements in the looms for weaving such tissues consist in "the application and adaptation of the well-known "jacquard mechanism" together with "suitable mechanism "whereby the same is made or rendered better applicable to "the loom." When the jacquard apparatus is applied in the ordinary manner, "the abrupt or sudden action caused by the "treadles through the jacquard upon the warps, and also "their great extent of opening or separating to allow the "shuttle to pass" are liable to break the metallic strands. To remedy this evil, the rising motion of the head board of the jacquard apparatus is "first met by an elastic resistance and "then stayed at the proper distance by an adjustable stop "piece."

The wire before the weaving should be carefully annealed by heating it and allowing it to cool gradually "in order to "destroy the brittleness caused in the drawing." The inventor describes the annealing process which he prefers, likewise his mode of applying the head board and stop piece, and his "manner of setting the loom to work."

[Printed, 8*d.* Drawing. *See* London Journal (*Newton's*), vol. 17 (*conjoined series*), p. 64.]

A.D. 1838, September 6.—No. 7798.

GIBBS, Henry.—"An improved perforated button." This button is composed of two discs (called an outside and an inside disc) parallel to each other and united by "a small central "circular part" called a shank. There is sufficient space between the discs to receive the thickness of the cloth or other fabric wherein the button hole is formed. The inner disc is perforated with holes near the centre or round the edge of the circumference.

The button may be made from one piece of material in a lathe, and the holes may be afterwards drilled through and countersunk.

Or each disc may be made separately. If the holes are to be near the centre of the inside disc, the shank is raised or stamped from the central portion of the outside disc. When the discs are united, the outside one "will exhibit a circular "opening at the centre," through which "the needle is passed "and repassed in the act of sewing on to the garment." If the holes are to be near the circumference, the shank may be raised or stamped from the inside disc. In the former case the inside disc is usually smaller, in the latter larger than the other.

[Printed, 6*d*. Drawing.]

A.D. 1838, November 13.—No. 7869.

HOLMES, John. — "Improvements in forming moulds for "casting in metal studs, buttons, nails, tacks, and a variety "of other articles." The improvement consists "in the "employment of a pair of parallel plates fitted to each mould "and peculiarly formed with elevations and depressions in or "upon their faces suited to the desired figures of the articles "to be cast." The inner faces of the plates come into close contact with each other between the two frames forming the box in which the sand is held and moulded. One of the plates "is to be accurately set out on its face in divisions "according to the number and size" of the intended articles; it is then drilled through at the centres, "and a series of large "holes formed of the sizes of the heads" of the articles. The plates are then fastened face to face, and small holes are drilled through the other (or upper) plate concentric with the holes in the lower plate. The plates are now separated and a concentric recess is made round each hole in the upper plate; these recesses "are to produce in the mould the forms of the "under parts of the heads." Metal plugs, with a steel spike, shank, or pin fixed in their middle and with their heads ground to the shape of the outer parts of the heads, are secured in the holes of the lower plate. Ribs to form in the mould channels for conducting the melted metal are affixed to the lower plate; they have "branch elevations to produce gates "for the metal to run from the gutters into the moulded "recesses." The plates are put face to face into the frames; the mould box is filled with sand which is rammed against the plates; and when the frames are opened, the plates lifted off, and the frames again put together without the plates, "the "mould will be ready for pouring."

[Printed, 8*d*. Drawing. *See* Repertory of Arts, vol. 15 (*new series*), p. 75; London Journal (*Newton's*), vol. 14 (*conjoined series*), p. 379.]

A.D. 1838, December 1.—No. 7893.

HERBERT, Luke.—(*A communication.*)—"An improved "mode or modes of fastening trowsers and other parts of "dress or apparel." This fastening, "denominated in France "Serre coulisse," is applicable to the bands of trousers, to the backs of waistcoats, to braces, and to other parts of dress. It consists of two bands of cloth or other fabric, each having at one end a tab and a flat steel loop and at the other hooks or buttons for attachment to the trousers, &c. To one loop is fixed a sort of rack, namely, a plate slotted longitudinally with circular holes at intervals in the slot. The other loop carries a stud whose shank slides in the slot, whilst its head can be kept when required in any one of the holes "by the "action of a little spring at the back;" this loop carries also a button head, which when pressure is applied to it "forces "out the little stud beyond the thickness of the rack." The band to which the last-mentioned loop is attached slides over the other.

[Printed, 6*d*. Drawing.]

A.D. 1839, May 13.—No. 8068.

RODGERS, John Henry.—(*A communication.*)—“Improvements in clasps, or fastenings and connecting pieces, “ principally applicable to certain articles of dress.” The first improvement consists “in the adaptation of a lever to “ buckles” as a substitute for the ordinary “pointed tongue;” the second “in the adaptation of a spring stop” to a clasp or hook; and the third in a method “of connecting the parts of “ braces together.”

1. The buckle is composed of an outer frame, a cross bar, and a lever turning upon pivots in the frame. One end of the strap is fastened to the bar, and the other is to be passed “ under the front part of the frame and over the edge of the “ lever and then under the back part of the frame.” The front edge of the lever will by the tension of the strap be pressed down on the front part of the frame “so as to pinch “ it tightly” and prevent the strap from slipping from its hold.

2. A suitably shaped piece of metal has a portion of the middle “cut through in the shape of a long tongue.” The lower end of the plate is bent up into a hook, and the lower end of the tongue into a spring. The staple or eye being passed over the hook “is to be brought down into the recess “ of the hook below the spring;” it will be confined “until “ the spring stop is pressed back so as to release it.” Hooks and eyes formed of wire may be made on the same principle.

3. The front and the back ends are fastened to pieces “in “ which the two improvements of the buckle and clasp are “ combined.” The face of the buttons on the waistband has a loop formed on it. The hook of the clasp is to be passed over the loop, “in doing which the spring will be pressed “ back, and when the hook has taken hold of the button, the “ spring will stop or prevent the clasp from becoming disengaged.” The brace lengths or shoulder straps are connected to the back portions by means of a ring “placed between “ two double bars or holding pieces” and united thereto “ by a ring or loose joints.”

Each improvement admits of several variations “without “ departing from the nature of the improvement.”

[Printed, 1*s*. Drawings. *See* London Journal (*Newton's*), vol. 20, p. 29 and vol. 21 (*conjoined series*), p. 135, ; Mechanics' Magazine, vol. 37, p. 159; Inventors' Advocate, vol. 1, p. 259.]

A.D. 1840, January 21.—No. 8354.

ROWLEY, CHARLES, and **WAKEFIELD**, BENJAMIN.—" Improved methods of cutting out, stamping or forming, " and piercing buttons, shells and backs for buttons, washers, " or other articles from metal plate, with improved machinery " and tools for those purposes." The patentees describe various arrangements of machinery for cutting out, piercing (if required), and stamping at one operation, and machinery, " for forming the edges of round articles."

1. Machinery "adapted to cut out, stamp or form and pierce " a four-hole button" (but other articles may be cut out, &c., " by giving a suitable form to those ends of the tools which " are to exert the pressure"), and incorporated with a fly press :—"An additional perpendicular screw" is applied at the lower part at the base of the press, its central line corresponding with that of the upper screw, and its threads being cut in a contrary direction. The handle of the upper screw is prolonged downwards and passes through a hole in the handle of the lower screw, so that when the upper screw forces its slider and the upper moveable tool downwards, the lower screw will force upwards an additional lower moveable tool into the hollow of the lower or fixed tool and cause pressure upwards "beneath " the under surface of the piece of metal plate which has been " cut out by the descent of the upper moveable tool and carried " down into the hollow of the fixed tool." Instead of an additional screw a lever or levers may be employed to press up the lower tool; the screw however "is capable of giving a stronger " upward pressure." By giving suitable shapes to the ends of the moveable tools the pressure which they exert "is caused " to stamp or give form to the said piece of metal." To adapt the tools for piercing the metal four punching pins are fixed into the upper end of the lower moveable tool, and four corresponding holes are drilled in the lower surface of the upper one. The fixed tool has a large central hole bored through it; a steel tube accurately fitted moves up and down in the hole; the lower moveable tool (which moves up and down the tube) is formed with a shoulder for the lower end of the tube to rest on; the upper end of the tube and the upper end of the tool " conform one with the other like one surface, which surface " is convex suitably for the concavity that is to be given to the

"underside" of the button; the tube is larger, the tool is smaller than the button. A steel ring "is fitted into a circular "rebate sunk in the upper part" of the fixed tool; the interior of the ring is "exactly the size" of the button, and so is the upper tool, which when forced down enters the ring and cuts out the button. In order to get rid of the pieces of metal which come out of the four holes, the upper tool "has a central "hole within it" for their reception; when the hole is full, the pieces escape through a side opening in a socket wherein the upper tool is held by a screw, and a curved spout is fixed to the opening in a sloping direction. The button is removed laterally from the machine by means of a horizontal rod (the apparatus for giving motion to it is explained in the Specification) and descends through a spout into a receptacle.

2. Another arrangement incorporated with a fly press:—The screw is prolonged downwards and enters "a central hollow "within the slider"; the lower end has spiral threads cut on it "with a contrary obliquity to the ordinary threads," and these threads act in a box fitted into the central hollow. The box can move up and down in the hollow but cannot turn therein. The upper moveable tool is screwed into the lower end of the slider; it is a tube, and in it is fitted an "interior "upper tool" which moves up and down by the "action of "the lower reverse threads of the screw." The exterior tool cuts out a disc from the metal; the disc "is carried down into "the hollow of the lower tool"; the interior tool descending protrudes below the end of the exterior tool and presses upon the central portion of the disc. The interior tool carries one or more punching pins according to the article which is being made. The bottom tool is constructed for the reception of the pins, the escape of the punched out pieces, and the thrusting-out of the button.

3. Machinery having all its motions "derived from the con-"tinuous rotative motion of one axis":—The base is a piece of casting with three standards, two serving to carry the main shaft, the third to sustain two levers (one at the top, the other at the bottom); the shaft carries a crank which is connected by rods to the levers. The outer ends of the levers are linked each to a perpendicular slider. The levers "are not in the same "vertical plane," nor are the sliders. The upper tool for cutting out is at the lower end of the upper slider. The fixed

tool is " bedded in a flat plate." When a disc has been cut out, it is removed laterally and brought over the under slider and its tool by means of "a horizontal cross slider" fitted into a groove beneath the flat plate. The cross slider has a " rather conical" hole through it; the disc by the descent of the upper tool is carried down through the hollow of the fixed tool into this hole, and is conveyed by the slider over the under slider. The requisite motion for the cross slider " is derived " from two face cams" (fully described in the Specification). One of the tools for piercing, stamping, &c., is fitted into the under slider; the other is fixed in the under side of the flat plate. In order that the disc may safely "lodge and be held " within the hole" of the cross slider, a sliding weight having its lower end "convex and smooth" is "applied within the " interior" of the upper slider. This machinery with suitably shaped tools and certain alterations (explained in the Specification) may be used for making the backs of Florentine buttons.

4. Machinery in which the tools operate by means of a hammer or ram sliding between upright guides and raised by a rope that passes over a pulley:—The upper tool is fixed to the hammer, and the under tool is screwed on to a solid base or anvil. A cylindrical hole "is bored perpendicularly down " beneath the lower tool," and a cylindrical sliding plug moves up and down therein. The lower end of a slider "is fixed fast " into the plug," and the plug is raised at the proper moment by an elbow lever which is lodged in an opening in the anvil block. The horizontal arm of the lever enters an opening in the plug; the upright arm stands up by the side of one of the guides, and being "inclined obliquely" is acted upon by a piece of iron fixed across the hammer. When the hammer is drawn up, the piece of iron rises above the upright arm "which " is then drawn by the reaction of suitable springs" towards the guide and thereby pulls down the plug and its slider; when the hammer descends, the piece of iron presses against the arm and raises the plug and slider in readiness for action. To prevent the plug from yielding, a wedge "is inserted hori" zontally beneath the lower end," the wedge being jointed to an upright lever which is actuated by the other end of the piece of iron. The disc when pierced, &c., &c., is thrust out by a horizontal sliding rod as has been before mentioned.

5. The plate of metal from which the discs are cut is fed into the machines by an arrangement consisting of horizontal slides, a rack, and a pinion worked by a handle and having "only three " teeth left upon its circumference, the rest being wanting."

6. Machinery for rounding and smoothing the edges of buttons, &c. :—Within "a hollow conical box" a grooved roller is mounted on a horizontal axle. Inside the box circular grooves are formed "exactly opposite" to the grooves round the roller. The space between the grooves in the box and the roller "is only just sufficient to admit a round button or other " round article to travel round in that space with a rolling " motion." The articles are introduced through an opening at the upper part of the box; they receive in rolling round " a force and pressure by which the edge is formed, rounded, " and smoothed," and make their escape through another opening into a receptacle; their escape is ensured by a stop fixed in the opening.

Each arrangement of machinery is described at length in the Specification.

[Printed, 3*s.* 4*d.* Drawings. *See* Mechanics' Magazine, vol. 33, p. 205; Inventors' Advocate, vol. 3, p. 84.]

A.D. 1840, March 26.—No. 8452.

SABBERTON, JAMES.—"A fastening to attach straps to the " bottoms of trowsers." Each strap has attached to each end a bar by means of pointed studs on the bar which enter holes in the strap. The bar is hinged at one end to an upper bar, and is further secured to it when required by one of the studs (longer than the others) passing through a hole in it and by a loop hinged to the lower bar (at the end opposite the hinge) and entering a recess in it. One end of the axles of the hinge and loop terminates in a button which passes through a corresponding hole in the strap.

At suitable places in the bottoms of the trouser-legs are loops of a width equal to the space between the loop and the hinge on the bar. When the upper bar is passed through the trouser loop and the bar loop is put on to it, "the more strain there " is" on the lower bar, "the stronger will it be held up" by its loop.

[Printed, 6*d.* Drawing. *See* Inventors' Advocate, vol. 2, p. 355.]

A.D. 1840, April 16.—No. 8476.

UNSWORTH, William.—"An improved tag for laces." The tag is made of tin or other suitable material and conical in shape. When made a mandrel is inserted, and a tooth is "forced inwards" by punching the tag at the broad end of the cone "with a punch having a triangular end." The effect will be that, "when the tag is threaded with the lace and the "latter drawn into the tag," the tooth "will catch into the "lace and prevent its being drawn back out of the tag."

If the tag is small, the punch may be applied without the mandrel after the lace is drawn into the tag so as to fill it inside. "Any burr or projection made in the inside of the tag "would effect the object of the triangular tooth in some "degree."

[Printed, 4*d*. Woodcuts. *See* Mechanics' Magazine, vol. 33, p. 445, also vol. 37, p. 4; Inventors' Advocate, vol. 3, p. 259.]

A.D. 1840, June 17.—No. 8548.

PROSSER, Richard.—"Improvements in manufacturing buttons from certain materials, which improvements in manufacturing are applicable in whole or in part to the production "of knobs, rings, and other articles from the same materials." The materials are clays and clayey earths, flint and feldspar, separate or mixed together according to the quality of the article to be made. The ingredients are used "without the "addition of any water;" they are ground to powder, being first desiccated if found to contain too much moisture. The ground material is put into a sieve having about 2000 meshes to the square inch; such as passes through is suitable for being made into articles requiring a smooth surface.

"A machine and tools" are employed in manufacturing buttons, &c. The machine is a press comprising bed, bolt, bolster, treadle, and handle. The tools are "a cylindrical tool" secured to the bolt and having its under face "of the form in reverse" proposed to be given to the top of the button, and "a T-"shaped" tool whose top is of the form in reverse to be given to the back of the button; this tool fits loosely into a recess in the bolster and is worked by the treadle. The widest part of the recess in the bolster is deep enough to hold the quantity of powder necessary for the formation of a button when the tool is at the bottom of it.

The T-shaped tool is lowered; the vacant space in the bolster is filled with powder exactly level with the top; the upper tool is forced down (but with only "moderate velocity") upon the powder "with a force of about 200 lbs. to the square inch," and "a solid button is at once formed" ready for glazing, firing, &c. The button is raised from the recess by means of the treadle. A recess for receiving the shank is formed in the back of the button by a corresponding projection on the face of the lower tool. The shank is fixed to a small metal cup which is dished so as nearly to fill the recess in the back of the button. A little cement is put into the recess, the cup is inserted, and will adhere thereto when the cement is dry.

To make a button with holes instead of a shank, both tools "must be so cut in their under and upper surfaces as to produce the holes required."

The patentee claims "a button of a new construction:"—It has only two holes with a groove "in the upper surface" between the holes, so that "the thread rests in the groove."

In the Specification the patentee uses the words "manufacturing from the said materials *and others* a button;" also the words "*and whether the said button is manufactured, ... or from any other materials and by any other process;*" the words in italics were disclaimed by him, and the Disclaimer was stamped and enrolled December 29th, 1845. The "memorandum of alteration" was stamped and enrolled May 8th, 1852.

[Printed, 8*d*. Drawing. *See* London Journal (*Newton's*), vol. 27 (*conjoined series*), p. 123; Mechanics' Magazine, vol. 33, p. 593; Inventors' Advocate, vol. 4, p. 50; Transactions of the Society of Arts, vol. 54, p. 179.]

A.D. 1840, July 11.—No. 8565.

BARNETT, George.—"Improvements in fastenings for wearing apparel." The patentee describes (1) spring hooks or hooks with shields; (2) hooks with indented stems; (3) means for fastening buttons when the shank is passed through an eyelet hole; (4) brace buttons; (5) buckles; (6) a method of uniting backbands which are tightened by lacing; and (7) a method of fastening the ends of trouser straps which are connected underneath the boot or shoe.

1. One end of a suitably shaped piece of steel is bent up into a hook; the other portion is pierced with needle holes and

with an opening through which the hook passes "when in "use;" otherwise the hook is below the opening. Or the plate (which serves as the shield) may not extend beyond the hook.

2. The hook, when the stem is indented, is prevented thereby from "unhooking from the eye," whilst its elasticity will allow it "to pass into and from an eye when pressed with "force."

3. A piece of wire is used; it is doubled, so that one portion forms a spring tongue, the other a shield or guard with indentations thereon.

4. The button is composed of two discs; each is pierced with holes, but the edges and the holes of one are raised; the two are pressed together so that the raised edges and holes are flattened. Each disc may have its holes raised or coned.

5. The buckle consists of a frame and a lever tongue hinged thereto. The band is sewn at one end to the frame and tongue; the other end will be held secure "without the tongue "passing through the material;" the outward edge of the tongue may be either smooth or serrated.

6. The two parts of the band are joined by a middle piece, "leaving only a very short length" of the ends "beyond the "attachment."

7. One portion of the strap has a round hole or buttonhole formed in it; the other has fastened to it a stud or button carrying a sliding plate, which, when the portions of the strap are connected, is slid inwards (or it may be outwards) and renders the connection more secure.

[Printed, 6*d*. Drawing. *See* London Journal (*Newton's*), vol. 20 (*conjoined series*), p. 435; Mechanics' Magazine, vol. 34, p. 47; Inventors' Advocate, vol. 4, p. 51.]

A.D. 1840, August 8.—No. 8598.

HAWKINS, John Isaac.—(*A communication from M. C. Van Esschen.*)—"Improvements in buttons and the mode "of affixing them to clothes." The shank of the button is so formed "that a recess or cup shall be left" in the outer end. The shank is passed through a hole in the cloth, and the brim of the cup is pressed out and turned down by means of a tool which leaves "an ornamental surface on the end of the "rivet."

The press in which the tool is fixed is made with "a recess "in which a garment may be folded or rolled while a button "is being riveted at a considerable distance from the edge of "the garment."

The matrix in which the face of the button is laid during the riveting of the shank cup is so formed "that the resistance "to the pressure may be afforded by the whole surface of the "button or by such parts of the surface as will bear the "pressure without being injured."

In some buttons the middle of the face portion is perforated. The shank is separate, cupped at each end, or formed with "a double shoulder projecting around the middle" to have a space between the button and the cloth equal to the thickness of the part surrounding the buttonhole. One end is turned down on the face, the other on the cloth.

In others the face of the button is made with a depression in the middle and a hole through the bottom of the depression. One end of the cupped shank is fixed to a disc; the shank stem is passed through the cloth and the depression, and the cup "is riveted in the bottom of the depression by "means of an ornamented and polished punch."

[Printed, 8*d*. Drawing. *See* Mechanics' Magazine, vol. 34, p. 143; Inventors' Advocate, vol. 4, p. 116.]

A.D. 1840, August 27.—No. 8609.

CHURCH, William.—"Improvements in fastenings applic-"able to wearing apparel, and in apparatus for making the "same and like articles, and also in the method or methods "of preparing the said articles for sale." This invention relates principally to improvements on the one for which Mr. J. H. Rodgers obtained Letters Patent, dated May 13th, 1839, No. 8068, the said invention having been communicated to him by Mr. Church. The improvements consist (1) in contracting the breadth of that part of the hook which is to form the beak, thereby giving the finished hook a neater appearance and "allowing it to pass through a smaller eye, yet preserving a "sufficient opening at that part which is occupied by the "spring tongue to allow of its playing freely;" (2) in making that part of the eye intended to lie between the beak and the spring tongue "nearly of a straight form and round, whilst the "other parts of the eye are flattened." The hooks and eyes are prepared for sale by forming loops in cards and sheets and slipping each pair of hooks and eyes into a loop.

In the machinery (very fully described in the Specification) for making hooks the wire is fed into the machine horizontally between grooved rollers, and thence passes through a conducting tube over the top edge of a guide and "through an elliptical slot in a sliding cutter." Eccentric pins hold the wire whilst the portion designed for a hook is cut off by the knife edge of the slot and are then depressed so that the ends of the wire are bent down into two loops which are to form the eyes of the hook. "Curved closing dies" complete the forms of the eyes. A small nib projecting from the front of a sliding bar bears upon the straight portion of the wire, forces it down a "long recess in the guide plate," thereby causing it to bend and assume a form such that "a longer portion of wire is turned inward in forming the eye at one end of the loop than at the other." This surplus is to constitute the spring tongue, the shape of which is produced "by a die striking up against the face of the bar;" this bar "contains the counter die." The loop is flattened between the face of a die in the end of a horizontal sliding bolt and that of the bar, and the spring tongue is shaped by a projection on the die of the bolt "and its corresponding recess in the counter die." The bent wire is forced out into a receptacle "ready for the future operation of bending up the beak."

Before the beaking however the part intended to form the the beak "is contracted into a narrow neck," whilst the part occupied by the spring is left wide :—The blank hook is placed flat on the table of a small machine. "A chap" is brought down upon the shoulders of the blank and confines it on the table. A rod connected to "right angled levers" causes dies to approach each other and pinch the end of the blank laterally, whilst the part under the chap is protected.

In the beaking apparatus the blank hook is laid flat on a bed near the end of the machine. A pin fixed eccentrically in the end of a spindle is caused "to lift up the flat end of the hook and to bend it" over a pin which "extends from and is made fast in the centre of the spindle."

In the "apparatus for planishing the eyes," the eyes to be operated on are brought by aid of sliding plates and "a long slider" into such a position on a grooved die that the front edge of each lies immediately over the groove. A hammer then descends, and "the shoulder parts of the eyes will be-" come planished, whilst the front part is left round."

[Printed, 2*s.* 8*d.* Drawings. *See* Mechanics' Magazine, vol. 34, p. 221; Inventors' Advocate, vol. 4, p. 150.]

A.D. 1840, November 2.—No. 8670.

PUMPHREY, Josiah.—"Improvements in machinery to be " employed in the manufacture of wire hooks and eyes." This machinery is intended for the purpose of "flattening and " planishing" hooks and eyes. It consists mainly of two dies, one of which is "firmly imbedded" in the machine; the other, fixed to a bolt working in guides, alternately descends and ascends by the revolution of a cam mounted on a horizontal shaft. The partially formed hooks and eyes are laid on the lower die, and the descent of the upper die effects the flattening and planishing. The machine is actuated by steam or other power.

[Printed, 6*d.* Drawing. *See* Mechanics' Magazine, vol. 34, p. 382; Inventors' Advocate, vol. 4, p. 293.]

A.D. 1840, December 17.—No. 8743.

MABLEY, William Tudor.—"Improvements in producing " surfaces to be used for printing, embossing, or impressing." The patentee claims eight improvements, of which the sixth is the "use of dies formed by the agency of voltaic electricity " for the purpose of embossing or impressing horn, hoof, or " tortoiseshell in the manufacture of buttons."

In order to obtain a plate or block containing several dies " as is now usual in the horn button manufacture," one die with the required device is engraven or otherwise produced by preference "on copper or silver and of a convex form." The die is placed in connection with the battery "or in a single " cell apparatus," and metal is precipitated on it; this is then removed, another copy is obtained, and so on until the required number is produced. The copies are mounted in a strong block or plate of metal having cavities therein suitable for the reception of the copies and deep enough "to leave an " edge round the die by which to form the edge of the button." The copies "should be turned or otherwise shaped into a " regular form;" they can be removed from the block by passing pins through holes drilled up through the block, and a loose disc of metal may be put into each cavity between the block and the copy to prevent injury in the removal. The block, "when provided with register pins, as is well under-"understood," will be ready for use.

Other methods of mounting may be adopted; the patentee describes several.

"To copy a plate having a number of concave dies already "engraved" on it, a mould or matrix of the same is to be made "previously to forming the plate intended to be used." This mould or matrix "may be formed by any of the usual "methods;" when obtained, "it is to be treated as above "described."

Sometimes it is desirable "to make the manufactured "buttons themselves the mould from which the dies are to be "produced;" they may be pressed into a sheet of wax or plaster of Paris, but (as in all similar cases) they must be made conductors of electricity by the application of plumbago or other suitable substance.

[Printed, 1*s.* 2*d.* Drawings. *See* London Journal (*Newton's*), vol. 19 (*conjoined series*), p. 94; Mechanics' Magazine, vol. 34, p. 476; Inventors' Advocate, vol. 4, p. 406.]

A.D. 1840, December 31.—No. 8761.

PARKES, Joseph.—"Improvements in the manufacture of "covered buttons." These buttons are composed of a core of button board, two metal discs carrying each four projecting points, a flexible shank, a metal shell, a covering of horn, and a collet. The manufacture is effected by means of suitably shaped dies and pressure.

The points of the discs are turned down and pressed into the core, so that one disc will be sunk concave, and the other will be formed convex or of "the figure of the face of the "intended button." The shank is made "by sinking a por-"tion of fabric in suitable dies." The core is placed on the shank with the concave surface towards the protruding part, and the edges of the fabrics are pressed over it. The shell is then put on, and the whole being pressed together, the button is "in a condition to be covered with a thin plate of "horn."

The horn used is in a state of thin lantern leaf; the circumference of the discs is scolloped to prevent puckering. The lower die is kept heated to such a degree that the workman “ can just bear his hand to rest for a very short time on the “ upper surface of the die.” The disc of horn is placed in the die; a shape or mould is placed on the disc; a punch presses the parts into the die; the punch is raised to allow of the introduction of parts consisting of a tube and a punch; (the lower edge of the tube is “bell-mouthed so as to cause “ the scolloped edges to be pressed on to the back of the “ button,” and the punch is “to cause the collet to be forced “ through the horn into the button”); the collet is put into the tube; the tube with its punch is inserted into the die; and all parts “are in a condition to receive the punch” first-mentioned. In order to prevent the pressure coming on to the tube-punch “before the horn has been folded down by the “ tube,” a hollow block is placed over the tube-punch. The first descent of the punch will force down the tube “and cause “ it to gather the edges of the horn and press them on to the “ back of the shape.” The punch being raised and the block removed, the second descent will cause the tube-punch “to “ descend and force the collet into the button.” The button is now ready to be completed in the finishing dies.

If the buttons are to have metal shanks, they are to be applied “by having shanks and collets similar to those for- “ merly employed in making Florentine buttons under “ Sander's patent.”

[Printed, 10*d*. Drawing. *See* Repertory of Arts, vol. 16 (*new series*), p. 337; London Journal (*Newton's*), vol. 23 (*conjoined series*), p. 174; Mechanics' Magazine, vol. 35, p. 62; Inventors' Advocate, vol. 5, p. 21.]

A.D. 1841, January 26.—No. 8814.

JAQUIN, Cornelius Alfred.—“Improvements in the manu- “ facture of covered buttons and in preparing metal surfaces “ for such manufacture and other purposes.” The backs of the buttons have collets of metal coated with flock, and thus present the appearance “of being covered with woollen cloth.”

In order to coat a sheet of metal with flock, one surface is covered with copal varnish thinned with turpentine and coloured according to the colour of the flock. The coated sheet is put for about five minutes into an oven heated to about 150° Fahr. When the sheet is cold, another coating is applied over the varnish, composed of a mixture of 1 lb. of white lead, 1 pint of boiled linseed oil, ½ gill of free gold size, and colour; the mixture is thinned with boiled oil to about "the fluidity of "treacle." The sheet of metal is then placed on canvas, linen, or leather stretched over a frame; flock is sifted over the prepared surface; the composition is allowed to dry; the superfluous flock is shaken off; the sheet is placed on a rack for a few days, and it will then be ready for cutting up into collets or shells for the backs of covered buttons.

[Printed, 4*d*. No Drawings. *See* Mechanics' Magazine, vol. 35, p. 144; Inventors' Advocate, vol. 5, p. 84.]

A.D. 1841, April 5.—No. 8917.

BARSHAM, William James.—"Improvements in fastening "buttons and other articles on wearing apparel and other "descriptions of goods or manufactures." The button first described consists of a face portion, a shank portion, and a spring catch. The face portion may be of horn or other material; it has a recess sunk in the face, and the edges of the recess are undercut for the purpose of retaining the catch and allowing of its ready removal. The shank portion is "similar "to a small button;" its construction may be varied, and variations of it are described in the Specification. The button is attached to a garment by making a hole through the fabric, passing the shank stem through the hole and the eye through the recess, and then introducing the frame of the catch into the recess so that the tongue of the catch may pass through the eye.

The other button described is a brace button, and the improvement consists in the use of "a hollow stem which is "placed between the button and the cloth," the button being thereby "held at a distance from the fabric" and the thread protected. The stem may be separate from the button or form part thereof. "The thread may also pass over a holding sur-"face at the back." Modifications of this arrangement also are described in the Specification.

[Printed, 8*d*. Drawing. *See* Repertory of Arts, vol. 17 (*new series*), p. 356; Mechanics' Magazine, vol. 35, p. 335; Inventors' Advocate, vol. 5, p. 244.]

A.D. 1841, April 5.—No. 8918.

McEVOY, Henry.—"Improvements in fastenings for bands, "straps, and parts of wearing apparel." These fastenings may be used in many cases instead of buckles; they are applicable to gentlemen's stocks, to clogs, to bands and straps for harness, and especially as a means of attaching straps to trousers; the invention is described in the last-named application.

The fastening consists of (1) a plate carrying a spring tongue; (2) a shield; and (3) a staple. The tongue is sufficiently elastic "to return to its flat or central position after " having been forced either way by the introduction and " withdrawal of the staple." The middle part of the shield is raised, and the extreme edge is bent " so as to form an inlet " for the reception of the plate;" it is intended to sustain the pressure occasioned by forcing the staple into the position which it occupies when fastened, to secure free space for the action of the spring, and to prevent the top of the staple " from acting objectionably" against the boot or shoe. The strap is prepared by cutting a square part out at each end, and by making in it three holes corresponding to holes in the plate and shield; the three parts are then riveted together. The staple is made with a top for attachment to the trousers; it "is made to partake slightly of a hook form" and with a slot at the bend of the hook.

When the strap is attached to the trouser, the hook is held by the plate, and the end of the spring enters the slot and " prevents the staple withdrawing."

[Printed, 6*d.* Drawing. *See* Repertory of Arts, vol. 18 (*new series*), p. 18; Mechanics' Magazine, vol. 35, p. 335; Inventors' Advocate, vol. 5, p. 244.]

A.D. 1841, April 22.—No. 8931.

HARRIS, THOMAS.—(*Partly a communication.*)—" Improve- " ments in the manufacture of what are called horn buttons, " and in dies to be used in the manufacture of such description " of buttons." This invention relates (1) to a mode of applying flexible shanks to horn buttons; (2) to a mode of ornamenting horn buttons by inlaying or gilding or silvering the faces thereof; (3) to a mode of constructing dies "by applying " separate boundary circles to each engraved surface of a die;" (4) to a mode of constructing dies, "whereby the horn or hoof " employed will not be permitted to express beyond the " circumference of the button."

1. The button blanks are shaped in dies, the lower of which is plain or ornamented; if ornamented it is not to be so

highly heated. The shank is then introduced, and the shank die is applied, "but it is not to be heated," as it will receive sufficient heat from the lower die; a metal collet and a metal plate being placed in the groove or recess of the shaped blank, the whole is submitted to pressure until the dies are cooled, "when the buttons are to be finished as heretofore."

2. The button is submitted to two pressures; the first forms the face "in suitable dies producing a recess;" the second fixes the ornamental surface and when desired embosses the surrounding part of the face. The gilding or silvering is effected by applying to the face an adhesive matter suitable for causing gold or silver leaf to attach itself to the face or part of the face; the process is the same "as is practised when "gilding or silvering other surfaces."

3. "Separate boundary lines" are applied "to each engraved "surface of the plate, whereby the accuracy of fitting will be "ensured, as no one of the bounding circles of any engraved "surface of a plate depends on another such bounding circle;" consequently each is "capable of separate adjustment and "fixing."

4. In forming the dies "the bounding circle" is of such a depth that "the counter die may slide within it and fit accu-"rately," and the circumference of each button "shall be "formed smooth and accurate by the interior of the die." The patentee prefers "to make single dies and to arrange them "in respect to the counter dies in such manner that two dies "may be used with each counter die" to suit horn buttons with metal shanks or buttons to receive flexible shanks.

[Printed, 1*s.* 2*d.* Drawings. *See* Repertory of Arts, vol. 17 (*new series*), p. 1; London Journal (*Newton's*), vol. 23 (*conjoined series*), p. 177; Mechanics' Magazine, vol. 35, p. 365; Inventors' Advocate, vol. 5, p. 277.]

A.D. 1841, April 22.—No. 8932.

JEFFERIES, HUMPHREY. — "Improvements in the manu-"facture of buttons." The first and second parts of this invention relate to the manufacture of covered buttons, the third to a new construction of button suitable for brace buttons and others "where the needle in fastening them passes through "and through the buttons." Many dies are required, and the novelty consists in "the employment of one metal shell "for each button."

The patentee prefers to combine the first and second parts in the manufacture of covered buttons. A disc of copper suitable for forming a shell is subjected to two dies and is then annealed; it is then operated on by two other dies when it assumes a shape having "a hollow circular recess" formed at its outer edge and "a short tube" projecting from the middle; it is then "blacked or japanned." A disc of silk or other fabric having a hole through the middle is placed on the tubular part, and by the action of other dies the tubular part "will be folded down and flattened on to the fabric," leaving a hole through both for the passage of a flexible shank. The shank and "two surfaces of button board" are placed in the shell (with the back fabric affixed thereto); the whole is laid on a disc of "covering fabric" and "placed in the covering "dies;" the punch descending "will carry down the various "parts into the lower die" and cause the outer edge of the back fabric "to be pressed into the groove or circular recess "around the shell." The punch being raised, a tube is introduced by which the outer edge of the covering fabric "will be gathered over" the groove, and by a second descent of the punch will be pressed into the groove, "and thus will "all the parts be combined." The button will now be ready to undergo the final pressure in ordinary finishing dies.

Brace buttons :—A disc of copper is pressed into the shape of a ring with a recess round it; it is placed on a disc of fabric (by preference strong linen) and submitted to the action of dies; the upper die is then raised; a tube is introduced into the lower die, thereby gathering the edge of the fabric over the recess; and the upper die again descending forces the edge of the fabric into the recess. The outer edge of the recess is depressed, and the button is completed in other dies.

[Printed, 1*s*. Drawings. *See* Mechanics' Magazine, vol. 35, p. 365; Inventors' Advocate, vol. 5, p. 277.]

A.D. 1841, April 27.—No. 8938.

STOCKER, Alexander Southwood, and HEELEY, Clement.—"Improvements in patten and clog ties, and other articles "or fastenings of dress." The patentees make their patten and clog ties from thin metal plate (preferring steel); they cut the metal into the required shape, perforate it for the strings and for the nails, and cover it with leather or other material.

The dress fastenings mentioned are hooks and eyes; these they stamp out of sheet metal (preferring brass), and the improvement refers to the hook. They press out from the plate portion (by which the hook is attached to the dress) a stop; this "rising above the surface" prevents the eye "from "coming out of the hook without considerable pressure." They also slightly turn up the point or end of the hook "to "facilitate its fastening in an eye." The stop stands out under the point or end and retains the eye within the hook.

[Printed, 6*d*. Drawing. *See* London Journal (*Newton's*), vol. 21 (*conjoined series*), p. 449; Mechanics' Magazine, vol. 35, p. 382; Inventors' Advocate, vol. 5, p. 292.]

A.D. 1841, August 27.—No. 9058.

CHAMBERS, THOMAS, FRANKLIN, FRANCIS MARK, and ROWLEY, CHARLES.—"Improvements in the manufacture of "buttons and fastenings for wearing apparel." The patentees claim the invention of—

1. A button shank "made in the form of a cross and pro- "truded through" the collet of a covered button. The edges of the cross are rounded, and the outer ends are so turned up that they enter a central hole in the collet and retain the shank therein.

2. A shank made from a disc of metal perforated with four holes, sunk in the middle, and formed with a flange at the outer edge which holds it in the collet.

3. A collet made of steel "tempered blue," such that "it "will lap over and cover the edges of the button."

4. A button with a moveable shank, so that different button heads may be "used at different times with the same gar- "ments:"—The collet has two holes, one (with an enlargement at one end) for the reception of the shank, the other "to receive a stud formed on the shank." The button is composed of (1) a front shell, (2) a portion of button board placed in the shell, (3) an inner shell, (4) a coiled spring, (5) a disc of metal which closes the holes in (6) the collet, (7) a shank made with four holes for attachment to the garment, and with two projections, one of which carries a stud. One projection is "pressed under the collet," so that the other "may enter "the enlargement;" the button is turned "one quarter "round," and the spring forces the stud into the hole formed in the collet to receive it.

5. "Vest bands:"—The folded edges are cemented together or bound with tape which is cemented on to the edges; they are united either by separate eyelets or by eyelets made from one piece of bent wire or stamped out of one piece of metal, or by means of an elastic apparatus. The apparatus consists of (1) "a bar or frame with two slots formed through it," (2) "two springs formed around the bar," (3) "two studs with "circular plates or discs on each of their ends." The bar with its springs is enclosed "within the double surfaces of "fabric of which the vest bands are in these cases formed;" the studs passing through the slots will cause the springs to be compressed, will resist the separating of the parts of the band, and will offer an elastic resistance.

6. Apparatus for fastening stocks:—A ratchet bar is fixed to one end of the stock. A plate carrying a socket for the admission of the bar is fixed to the other end of the stock. A spring secured at one end to the plate carries a stud at its other end; "a projecting edge of this spring passes through an opening "or slit formed in the plate, and enters a notch formed in the "ratchet bar, and thus holds the bar to whatever position it "may be forced into the socket."

An elastic fastener consists of a metal stem fixed on one end of the stock and carrying a stud, and of a slotted frame fixed on the other end, carrying a spring round it and formed with an eye which passes on to the stud. The frame with its spring is let into the stock and secured in a sort of case. A stud having a circular plate at each end compresses the spring when pressure is applied, "having a tendency to separate "the ends" of the stock, and "the spring will offer an elastic "resistance." Sometimes an elastic strap is affixed to one end of the stock, the other end of the strap "being affixed by "a convenient attachment."

7. Catches or fasteners for trouser straps:—Slotted plates, having "a groove on either side of each of the slots," are riveted to the ends of the straps. Plates, each having a spring catch affixed thereto, are fastened to the trouser legs. The catches "act like hooks."

8. An improvement in breastpins:—A projecting point or guard is fixed to the stem or head; when the pin is pushed in as far as the lower part of the guard, "the point of the guard is to "be raised and caused to enter the neckerchief or shirt front."

9. An improvement in eyelets :—The eyelet is made from a piece of wire, the middle only being bent for the reception of the hook; the parts over which the thread passes being left straight, "the eye will be found to lie more close to the "garment."

10. Improved mode of fastening bands for drawers :—Rows of eyelets are applied to one side, and a row of hooks to the other.

11. Elastic straps for children's shoes : — The strap is fastened to the back of the shoe, and the ends are secured in front by a hook and eye or other device.

12. A substitute for bone and ivory :—The patentees employ "ivory nut or vegetable ivory" for making brace and other buttons.

[Printed, 1*s*. Drawings. *See* Mechanics' Magazine, vol. 36, p. 238.]

A.D. 1841, September 20.—No. 9087.

DEZ MAUREL, François Marie Agathe. — "(*A communication.*)—An improved buckle." This buckle may be made in either of the following ways :—

1. A plate of metal is cut through with three longitudinal slots. The band is secured at one end in any convenient manner to the hindermost or back bar formed by one of the slots and one side of the plate. The free end of the band is passed up through the slot next to the one just mentioned, then over a bar formed between this slot and the front slot, and then under the bar forming the front side of the frame or plate. By making the frame slightly curved the tension on the band presses it hard against the bar, and the effect will be increased if the bar is made "with rather sharp angles on "its under edges" or with an indented outside edge."

2. The inside edges of the top and bottom of the frame are V-shaped or grooved, and the bar slides therein. When the free end of the band is introduced as before mentioned, the bar is slid forward and nips the band between it and the front side of the frame.

3. The bar is made with a V-edge in front, and the inner part of the front side of the frame is grooved. When the bar is slid forward, a part of the band is forced into the groove.

[Printed, 6*d*. Drawing.]

A.D. 1841, October 7.—No. 9115.

AINGWORTH, Benjamin.—"Improvements in the manufac-" ture of buttons." The improvements relate to (1) metallic shanks, (2) flexible shanks, (3) buttons and studs of porcelain, glass, or earthenware, (4) covered buttons.

1. One shank consists of a "round or roundish knob of " metal" perforated with two bell-mouthed or countersunk holes intersecting each other at right angles; it may have a flat top for soldering to the button back or a divided stem for passing through a hole in the button back and clinching, or a threaded stem for the reception of a nut on the other side of the back.

Another shank is stamped from sheet metal; it is in the form of a cross; the edges are rounded, the arms are partially bent up at right angles, and the extreme ends are soldered to the button back.

Another shank is a piece of wire bent into the shape of a crescent or a staple, and having its ends soldered to the button back.

Another shank is made from the same piece as the button or button back "by leaving a small central prominence" which is perforated as No. 1.

2. Flexible shanks are made by perforating the button back with a circular row of holes, by cementing a disc of cloth, silk, &c. to the outside of the back, and by working "a strong " twisted cord of silk or other thread" crosswise through the back and disc; the intersections of the cord across the middle of the outside "constitute the new kind of flexible shank."

3. The back surface of the porcelain or other front "is ex-" cavated with a circular recess" into which is cemented a shell back carrying any kind of shank. Studs may be made in like manner, or the porcelain or other head may be let into a hollow in the other part, and the edge of the hollow is then turned over and burnished.

4. Covered buttons are made so as "to conceal all metal at " the back" except the shank; they may have either a metallic or a flexible shank. The back is perforated through the middle; a disc of cloth or other fabric perforated with a smaller hole is cemented concentrically to the back; "the central part of the " cloth" is pushed through the hole of the back so as to pro-

trude into the hollow of the back, and the protruding portion is cemented down so as to overlap the circumference of the hole of the back.

[Printed, 1*s*. Drawing. *See* Mechanics' Magazine, vol. 36, p. 315.]

A.D. 1841, December 21.—No. 9202.

SMITH, William Henry.—"Improvements in the construc-" tion or manufacture of connectors or fastenings applicable " to garments and other uses." The patentee claims (1) hooks and eyes for trouser straps; (2) hooks and eyes for connecting parts of garments; (3) a watch guard; (4) clothes pegs; (5) fixing flexible shanks to metal buttons; (6) means of directing the needle when sewing buttons; (7) making brace buttons; (8) making buttons with a moveable back; (9) making tags for laces.

1. "The opening into the eye" is made "narrower than the " eye," and the hook is made with "a narrow part suitable " for entering into the narrow opening into the eye."

2. The part forming the hook is bent into "two inclined " surfaces," which "come together and form the point" of the hook; thus the hook portion is four-sided. The eye portion of the eye is triangular. A slight modification of this hook may be used with "flexible eyes."

3. A wire or piece of metal, either circular or somewhat pear-shaped, has attached to it a chain which is secured to the watch; the wire is passed over a button of the wearer's dress.

4. The pegs are of metal and have elastic stems.

5. The shanks are passed into holes having serrated edges, and are held by bending the edges inwards.

6. The back shell is stamped with radial grooves.

7. These are made in two ways:—The button consists either of an inner core of some preparation of paper or pulp and an outer shell of metal, both pierced with holes and japanned, or of two shells having an opening in the middle and a "tissue " of net work or thread" which fills up the opening.

8. The back plate is "in a small degree oblong," sufficiently to spring it into the front shell.

9. The bottom of the tag is made with a serrated edge which is turned into the lace.

[Printed, 6*d*. Drawing.]

A.D. 1842, April 13.—No. 9319.

FALCONER, William.—" Improvements in apparatus for " attaching buttons and fasteners to gloves and parts of gar- " ments." This invention relates (1) to fasteners for gloves, &c., (2) to the stems of covered buttons, and (3) to fasteners for trouser straps.

1. This fastener is composed of two discs (usually hinged together), a screw, and a stud. The inner faces of the discs are roughened " in order that they may hold the part of a " glove or other material when pressed together " by screwing the stud on to the screw. The screw is fixed to one of the discs and passes freely through a hole in the other. The stud has a screw thread formed in its shank.

Or one of the discs may be fixed to or form part of the stud. Or the head of the screw may be in the hollow shank of the stud, its stem protruding so as to screw on to the disc or discs.

2. The stem is formed with a screw thread inside. The lower end of the stem (enlarged or not into a disc) has " roughings, points, or projections formed thereon." The button is secured to the material by the aid of a disc carrying a screw which passes through the material into the button stem.

3. This fastener " will be found very useful for washing " trousers." The hem of the trouser leg has a buttonhole on each side. A plate slightly curved, roughed on the under edge " to prevent its movement when once placed in the hem," and carrying a button on its middle, is thrust through the hole so that the button protrudes, and the strap can be buttoned thereto. Or the plate may be perforated for attachment to the trouser leg by sewing. The strap may have at each end a suitably formed plate for the reception of the buttons.

[Printed, 8*d*. Drawing. *See* Record of Patent Inventions, vol. 1, p. 195.]

A.D. 1842, May 9.—No. 9347.

SANDERSON, William.—" Improvements in weaving fabrics " to be used for covering buttons."

[No Specification enrolled.]

A.D. 1842, June 13.—No. 9394.

MOSS, Isaac.—"Improvements in the manufacture of covered "buttons, ornaments, and fastenings of wearing apparel." The patentee claims 17 improvements, of which 9 relate to covered buttons.

1. A metal shell is covered with silk or other fabric, and encloses "what is called a Leek button" in order to form the shank.

2. The shank is made of "woven wire cloth" which protrudes through the back shell or collet; it may (or not) be covered with a thin fabric.

3. A button "suitable for shirts" and other purposes where the thread passes through and through is made of woven wire cloth enclosed in a ring shell of metal.

4. The button called a Leek button has a metal edge applied to it. The button (made by preference on a mould of pasteboard) is enclosed in a metal ring shell which sometimes is previously covered with fabric. Sometimes the ring is large enough "nearly to cover the back."

5. A button "principally intended for the purposes of up-"holsterers" has a covering of leather shut in by closing down the projecting edge of the shell.

6. A perforated disc of prepared buttonboard or pasteboard is used as a collet; it may (or not) be covered with fabric at the back.

7. Buttons are ornamented by making the face of "woven "covered wire or woven covered yarn or thread," so that "the under surface of fabric used as a covering to the front "of the button may be seen through."

8. An ornamental surface is produced by using a perforated shell, and placing beneath the shell a disc of velvet or other fabric.

9. "An ornamental fringe" is applied to buttons by cementing the edge of the fringe to the inside of the ring shell, and pressing down the raised edge of the shell.

10. Covered rings for ornamental purposes are made by covering ring shells with fabric, cementing them together, and turning down the edges of the metal; or by placing both edges of the fabric in the shell, and pressing the edges of the shell together.

11. Drops or tassels for fringes are covered by cementing to them woven fabric, which is made to take the form of the drop or tassel by afterwards rolling it on a heated plate grooved to correspond with the shape of the drop or tassel.

12. Tags for laces are covered on one side with fabric, bent into shape, and cemented on to the lace; or metal bent into shape and coated on one side with cement is wound round the lace; heat should be applied in either case.

13. An elastic eye for a hook is made with a hoop and two stems which cross each other; the hook enters the space between the hoop and the stems.

14. Hooks are made with a tongue, so that two hooks may be used instead of a hook and an eye.

15. Hooks and eyes are made, the former with a "projecting " head," the latter with a space "between the two points of " fixture;" the head enters between the points.

16. Vest bands are fastened by hooks and loops of cord secured within a perforated tin plate.

17. Hooks and eyes are made from wire covered with yarn or thread, cut into lengths, and bent into shape.

[Printed, 10*d*. Drawing. *See* Record of Patent Inventions, vol. 1, p. 404.]

A.D. 1842, July 16.—No. 9423.

CHATWIN, John.—"Improvements in the manufacture of " covered buttons." The object of this invention is "to so " manufacture covered buttons by dies and pressure as to " save much of the covering materials heretofore necessary " for folding within the buttons."

Several dies are employed in the manufacture. A disc of (by preference) brass for making the front is dished or sunk into shape and then annealed. A disc of covering material for the face is put into the metal disc or shell, and "the raised " edge of the metal shell" is turned or folded down in a die, and is afterwards still more closely pressed down in another die in order to hold the covering material securely. The shell " is next raised" to a shape shewn in the annexed sheet of drawings, the covering material being at the outer surface; " this process constitutes one peculiarity" of the invention, and is accomplished by means of dies, "the nature of which " is clearly shewn in the drawing." The shell is now ready to receive the filling of button board, the collet, and the flexible shank; these parts "are introduced by hand in place "of using the covering tools heretofore employed;" they are afterwards "flattened and finished by suitable dies." A metal shank may be used if preferred.

"In making the best classes of buttons it is desirable that "the whole of the shell should be covered;" for this purpose another disc of material (by preference of woven fabric and less costly than the covering material) "cut from the centre "in radial directions" is required. It is affixed with the covering material to the shell, and when the shell is sunk into shape the points "may be readily removed by hand from the "face of the button and turned over and folded into the "interior of the shell;" in this case "the ordinary covering "dies or tools are used in order that the covering material "may be drawn tight."

The patentee makes "covered buttons without shanks;" the shell of the button is perforated with holes for the passage of a needle.

[Printed, 10*d*. Drawing. *See* Repertory of Arts, vol. 1 (*enlarged series*), p. 203; Record of Patent Inventions, vol. 1, p. 482.]

A.D. 1842, November 15.—No. 9519.

ROWLEY, CHARLES, and **TURNER**, JAMES.—"Improvements "in the manufacture of perforated metal buttons." The button consists of one thickness of metal perforated with three or four holes; the improvement consists in causing the edges round the holes to be compressed by means of dies, so that each hole will appear "as if a ring were let into the button;" by this means the thread will be less liable to be cut, as it will be "supported by the rounded surfaces so raised."

The button blank being "shaped in proper shaping dies" and perforated is submitted to dies of the following construction:—The upper die carries a plug which passes through each hole, fills up the interior thereof, and enters a recess formed in the lower die. "The compressing of the metal "around the holes into the ring-like form is caused by the sunk "parts" of the upper and lower die. All the holes may be completed at one operation "by a suitable formation of dies."

The perforations may be effected either by cutting or by punching "so as to form a short projection in one side," and the edges of the holes so forced through "may be condensed "into a ring-form by the tools or dies above described."

[Printed, 6*d*. Drawing. *See* Repertory of Arts, vol. 2 (*enlarged series*), p. 23.]

A.D. 1842, December 22.—No. 9566.

BRIDGES, WILLIAM. — "Improvements in buttons." The first part of this invention relates to the manufacture of buttons which have "moveable or detachable shanks," the second to the employment of materials for the faces of buttons so as "to use a less quantity of such materials" than is ordinarily used.

1. The button is composed of a shank, a back and front, and a spring and discs between them. The shank consists of a pierced circular portion and a shoulder "clipped square." The spring is a thin piece of hardened and tempered steel "raised or cupped in the centre" and having three arms radiating from the central part; it is put into a metal shell, the edge of which is closed over and keeps the spring in place. The shell is formed with a projection to prevent the spring from "being pressed too far inwards." In flat buttons the central part of the shell is cut away, and "the inside of the "button-front comes so near to the spring as to answer the "purpose of the projecting stop." The back consists of a metal disc having in the middle a perforation of the shape of "two squares, one superposed on the other, in such a position "that the angles formed by the intersection of the diagonals" are equal; this disc is placed in an outer disc having a very shallow "circular depression in its centre;" the discs are soldered together; a square hole is made through the outer disc, such as "to correspond with any four alternate angles of "the hole" in the inner disc, and the edge of the outer disc "is now raised." The several parts of the button (except the shank) are put together by aid of pressure in dies described in the specification. The mode of attaching and detaching the shank from the button is also explained.

2. Two metal rings are required, the shape of each is shewn in the first of the annexed sheets of drawings. A disc of covering material is placed on the larger ring, the neck of the ring passing through a hole in the middle of the material. The smaller ring is laid on the neck of the larger ring; the

whole is placed "on a peg-die," the "greatest diameter" of the larger ring being downwards; a punch brought down on the neck "spreads it over the face" of the smaller ring. When removed from the die, a back "such as is commonly " used for covered buttons excepting that it has no raised " edge" is dropped into the larger ring; the whole is again placed on a peg-die, and a punch, descending on the ring, closes it over and thereby holds the back. After this "the " cloth to form the shank is put into the shell and forced " through the back."

To make discs to form the fronts of these buttons when the fronts are of woven fabric, sheets of metal are coated with an adhesive composition, and the fabric is laid on the coated surface and pressed smoothly thereon. In cutting-out the discs the face of the fabric is to be placed downwards on the die; the face of the punch should be convex or flat according to the shape to be given to the face; "the face of the die should " have a narrow bearing around the cutting edge, so that only " a slight mark may be made around the apertures formed " by cutting-out the discs."

In cutting-out a material having a pattern on it, which is " to be placed in the centre of the face of the button," the plate to which the fabric is cemented is placed on a die, the fabric being upwards. The die has a small cavity in the middle. A pointed punch descending on the fabric "makes " a slight indentation in the plate." The punch used for cutting-out the discs has in the centre "a slight depression " corresponding to the projection of the uncoated side." Before the punch is brought down on the die, the uncoated side "is pressed upwards against the punch" until the projection enters the depression."

The apparatuses used by the patentee in the manufacture of his buttons, and the processes (with certain modifications) are described at length in the Specification.

[Printed, 1*s*. Drawings.]

A.D. 1843, March 2.—No. 9649.

FREARSON, JOHN.—"Improvements in fastenings for wearing " apparel." The novelties claimed are (1) an improved hook and eye; (2) an improvement "in the common hook;" (3) a fastening for wearing apparel applicable also to brooches;

(4) a fastening for trouser straps and an improved trouser strap; (5) an improvement in "clog fastenings."

1. The shape into which a piece of wire is bent to form the hook and the eye is shown in the sheet of drawings; the two ends of the former are soldered together and "bent at right "angles to form a hook"; when sewn on the hooked part "is turned towards the dress." To fasten the hook and eye together, "the eye must be inclined to the hook at an angle "of about 45°" until the end of the eye has passed the hooked part; it is then "brought in a line with the hook," and the hooked part "will enter the eye." A clasp may be made on the same principle.

2. The partially formed hook is submitted "in the process of planishing" to the action of dies, by which only parts of the hook are flattened, the other parts being flattened "on one side only, having a semicylindrical form." This hook cannot be introduced into the eye "without a slight "pressure."

3. A frame in which a jewel, &c. may be set is jointed to a plate. A pin "curved in a semicircular form" is fixed to the inside of the frame so that the joint "is the centre of the circle "of which the pin is a part;" it passes through a hole in the plate. A spring secures the frame to the plate, and a tapered pin is fixed on the back of the plate. The frame being raised, the tapered pin is introduced into the dress; the frame is then shut down on the plate, and during the motion the curved pin "passes twice through the dress."

4. A bar of metal carrying a stud is fastened to the bottom of the trouser, and a piece of wire bent into a loop, such that the stud can readily pass through the broad portion but not between the branches or narrow portion "without the exertion "of pressure," is fixed by means of a tube and plate to the strap. The stud passes through the broad portion and is held between the branches.

The improved strap can "elongate or shorten itself as circumstances may require." At each end is a bar having in it a longitudinal slot; its upper end is turned over to form a tube for the reception of a spring loop, and its lower end is formed with a shoulder. One end of a flat helical spring bears against the shoulder, the other against a pin which passes through the slot and is riveted to the strap.

5. A band of leather passes round the heel; a strap attached to the band on one side passes over the instep and is fastened to the band on the other side. The fastening of the strap to the band "is generally effected by a clasp."

Modifications of some of the foregoing are described in the Specification.

[Printed, 6*d*. Drawing.]

A.D. 1843, March 2.—No. 9650.

SIMPSON, THOMAS. — "Improvement in buckles." The improved construction although particularly intended for harness is "applicable to every kind of buckle." The improvement consists in making the pin on which the tongue works detachable from the other parts, thereby rendering the buckle readily removable from the article to which it is attached.

The buckle is composed of an arched part or ring, a pin or axis, a tongue, and two collars working loosely on the pin, one on each side of the tongue. The pin is a cylindrical rod formed with a screw on one end and a screw-head on the other. There are projections on the ring suitable for the reception of the pin. The tongue is cast solid and is drilled with a hole for the passage of the pin. The collars keep the tongue in its place on the pin.

A loop is all that is required in the article to which the buckle is to be attached.

[Printed, 6*d*. Drawing. *See* London Journal (*Newton's*), vol. 23 (*conjoined series*), p. 417.]

A.D. 1843, April 4. No. 9686.

ASTON, JOHN, and ELLIOTT, WILLIAM.—"Improvements " in the manufacture of covered buttons." This invention relates (1) to coating with a flexible cement "the back surface of the covering fabrics of die and pressure-made buttons" in order to cause "the weavings to be made more secure;" (2) to a mode "of forming the front metal shell of covered " buttons, and of applying covering fabrics thereto, whereby " less quantity of costly fabric is required for covering the " front of a button."

1. To make the flexible cement, soak 2 lbs. of bottle india-rubber in warm water for 12 hours; cut it into small pieces,

put it into a tin vessel, and add thereto 12 lbs. of spirits of turpentine. Place the vessel in a sand bath heated to about 200° Fahr.; after 36 hours take out the mixture, and work it with a wooden roller into "one homogeneous mass." Or dissolve (according to the former process) 1 lb. of prepared rubber in 7 lbs. of spirits of turpentine; add (whilst warm) 1 lb. of beeswax and then ½ pint of spirits of wine in which 4 oz. of camphor has been dissolved.

Either cement is brushed over the back of the fabric; the fabric is then hung up for about 2 hours, and the coated side is afterwards dusted over with very fine sand.

2. A disc of brass, after subjection to the action of three dies, is sunk into shape for making the front shell and has its outer edge turned up "to receive the edges of the fabrics " used for covering the front and back of the shell." The metal is to be annealed if necessary. The next operation is to apply a covering of common fabric to the back of the shell; this covering is "cut through the centre" to allow of its being pressed into the interior of the shell when applying the collet and shank. The edge of this fabric being pressed into the groove round the shell, the shell is ready to receive the front covering, namely a disc "of any elegant fabric." The edge of the covering being also pressed into the groove round the shell, the edge of the shell "is folded down, retaining the " edges of the two fabrics in the groove." The collet and shank are then applied; the outer edge of the shell is pressed over the collet, and the button is ready "to receive the finishing " pressure."

If no part of the back covering is to be seen on the face of the button, the edge of the shell is "to be turned up to a " less depth in respect to the sinking of the centre of the " shell."

The patentees do not claim "the construction of the dies" employed.

[Printed, 1*s*. 2*d*. Drawings. *See* Repertory of Arts, vol. 2 (*enlarged series*), p. 86; also vol. 6 (*enlarged series*), p. 130.]

A.D. 1843, April 19.—No. 9698.

SMITH, William Henry.—"Improvements in the construc" tion and manufacture of gloves, mitts, and cuffs, and in " fastenings for the same, which may be applied to articles

" of dress generally." The patentee claims five improvements :—(1) the application of a pocket to a glove, mitt, or cuff; (2) cementing instead of sewing together the parts of a glove or mitt; (3) a mode of cutting out the parts of a glove or mitt; (4) "an improved form of the ordinary sewing machine"; (5) a fastening for gloves, &c.

1. A circular or other suitably formed piece is cemented or sewn to any convenient part; a cross slit in the article forms the mouth of the pocket; and the mouth is bound with narrow india-rubber web " crossed in the middle."

2. The parts when cut out are united "by overlapping and " placing any known insoluble glue or cement between the " two substances near the edge." The ends of the threads in the ordinary process of sewing are secured by fixing them down with cement in the seam "about one-fourth of an inch."

3. The glove is cut out in two parts; "the trank" forms the back and thumb; "the palm" forms the inside. Strength is given "where the junction is formed between the thumb-piece " and the inside or palm" by causing the ends of the inside or palm to overlap in a somewhat triangular form."

4. The machine is formed "with curved ends," the object being "to effect a neater seam at the thumb and fingers by " working round suitable curves." The machine is made of glass "to prevent the soiling" of the article during the operation of sewing.

5. The fastening is composed of an oval eyelet and an eye or catch, both of which enclose a stud or button. "The eyelet " or catch will have to be brought to an angle with the stud " or button before the connection can be broken."

[Printed, 6*d*. Drawing. *See* London Journal (*Newton's*), vol. 28 (*conjoined series*), p. 326.]

A.D. 1843, May 16.—No. 9729.

MILLS, William.—"Improvements in fastenings for gloves " and other wearing apparel, and in the mode of attaching the " same." These fastenings are "particularly formed buttons" of brass or other metal and made "by means of proper dies, " as is well understood in raising metal for other purposes."

The button consists of two separate parts, namely a perforated disc formed with a tube projecting downwards and turned inwards at its lower end, and an eyelet.

The disc is laid on the outside of the glove or other article; the stem of the eyelet passes up through the glove and a strengthening piece; and the eyelet is pressed on to the strengthening piece and the turned-in portion of the tube by dies worked in a screw or other press.

[Printed, 8*d*. Drawing. *See* Repertory of Arts, vol. 3 (*enlarged series*), p. 94; London Journal (*Newton's*), vol. 25 (*conjoined series*), p. 175.]

A.D. 1843, July 20.—No. 9845.

BEATER, JAMES GOLLOP.—" Improvements in the fastenings " for trowser straps and in fastenings for wearing apparel " generally." This invention includes (1) a button shank; (2) a "four-hole or trowser button;" (3) a button made wholly of wire; (4) fastenings for trouser straps; (5) a substitute for hooks and eyes; (6) a fastening for gloves; (7) a substitute for buckles; (8) a fastening for braces; (9) an improved dress-pin.

1. The shank is a piece of wire bent in the middle "into a " semicircular or looped form." To attach this shank to a button the narrow part of an eyelet is passed through the piece of cloth intended to cover the back of the button and into the back-shell, a metal washer being previously introduced to strengthen the button. The punch of a die spreads out the eyelet and fastens the whole together. An opening is now made in the eyelet to allow the loop to pass through, and a groove is formed in the eyelet by the same operation for the " better passage and guidance of the needle;" the dies required for this purpose are explained in the Specification. The shank is now put into the shell, "the loop passing through " the opening in the eyelet."

2. The button consists of a front and a back shell (each perforated in the middle) and a shank consisting of a piece of wire bent so that the parts "exposed at the opening in the " centre of the button" have a form nearly resembling "four " radii to the centre" of the button. This bent wire is put into the back shell; the shell is put into the front shell, and the edge of the latter is turned over the edge of the former. The wire may be bent into other shapes.

3. This button is merely a piece of wire bent into the shape of the figure 8; it is attached in such a position that its greatest length shall be at right angles to the length of the button hole.

4. One fastening consists of a piece of metal ("of a form "nearly triangular") attached to the bottom of the trouser-legs and a piece of metal (cut with a horizontal slot having a narrow opening at the top) attached to each end of the strap. The apex of the triangle is bent; it enters the narrow portion of the slot and rests on what may be called the arms of the slot.

Another consists of two pieces of wire bent so that one can be attached by a loop to the trouser and the other to the strap; the ends of the former, bent horizontally, take into eyes formed by bending the ends of the latter.

In another a triangular piece (attached to the strap) has on it a projection "one edge of which is inclined," and a spring riveted at one end to the lower end of the piece. "A semi-"circular piece of metal" attached to the trouser is introduced between the projection and the spring and is pressed forward over the edge of the projection.

Another consists of a hook sewn to the trouser and an eye riveted to the strap.

In another the hook has a slanting stem and a horizontal part turned up at a right angle at the extreme end. A loop formed on the end of the strap is passed on to the horizontal part of the hook.

5. A piece of wire bent into a form nearly resembling that of the letter T takes into a loop of cotton or thread or into a button hole. Sometimes a small bar is placed between the sides of the loop.

6. A piece of ribbon is fastened on one side, and to the other a square piece of metal slotted and having two pins which project over the slot; the ribbon is drawn through the slot and is pressed flat on the piece, when the pins enter the ribbon.

Another glove fastening consists of "two semicircular pieces "of metal;" the neck of the one is passed through a slot in the other.

7. A rectangular frame has a metal plate jointed to one of its sides. A piece of metal, having one end turned upwards and a slot large enough to admit the end of the plate, is passed into the frame, and the plate being brought down, its end enters the slot. In order to lengthen or shorten a belt or strap to which this substitute is attached, "three parallel bars" are

fixed to the frame. The belt is affixed to the frame "by being "passed over the first and third of these bars and under "the second." A wire "having a ring with which to take "hold of it" is introduced into the loop formed by the passage of the strap under the middle bar.

8. The brace-end "is doubled back" and attached to a frame provided with hooks which "enter holes formed at "regular distances in the brace." A wire bent into a T is connected to the detachable brace-end; the head of this wire "rests on the loop or fold made by the doubling of the brace," a slit being made in the lower end of the brace for the introduction of the head.

9. This pin is a piece of wire pointed at one end and bent at the other "so as to form a convenient head."

[Printed, 10*d*. Drawings.]

A.D. 1843, September 6.—No. 9879.

THOMAS, WILLIAM.—(*A communication.*)—"An improved "fastening for wearing apparel, and which may also be "applied as a fastening to portmanteaus, bags, boxes, books, "and other things." The parts of dress or other articles to which this fastening is applied "may be easily, quickly, and "simultaneously detached from one another." The fastening is "susceptible of considerable modification in its "external appearance" according to the purpose for which it is employed; it is described in the Specification as applied to (1) the back or front of a dress or stays; (2) a trouser strap.

Three thin blades of steel or other material are required; one carries "three small flat boxes;" one as many tongues with springs (or projections) on their under sides; and one (a thin and narrow blade) with projections thereon corresponding to those on the tongues. The last mentioned blade passes through the boxes and is held in position by a spring in the uppermost box, which allows it to slide when required; its projections are opposite openings in the boxes, and when the tongues are inserted, the springs "catch against the projec-"tions on the sliding blade." To undo the fastening the sliding blade is drawn down "so as to bring a plain part of the "blade opposite" the springs.

The boxes and the tongues may be fastened to the dress or stays without their blades, but the sliding blade must be retained. Other modifications are described in the Specification.

2. The blade carrying the tongues is attached to the trouser, the one carrying the boxes and sliding blade to the strap. The sliding blade is provided with a spring near its middle "for the "purpose of bringing it back again into its original position "when it has been drawn outwards to allow the tongues to be "withdrawn."

[Printed, 1*s.* 2*d.* Drawings. *See* London Journal (*Newton's*), vol. 25 (*conjoined series*), p. 170.]

A.D. 1843, December 5.—No. 9973.

WARDROPER, William.—"Improvements in the forms or "constructions of hooks and eyes for fastening dresses and "for other uses." The construction is such that, although the hooks and eyes may be easily connected and disconnected, they will be prevented "from coming unfastened accidentally."

That part of the eye which comes into contact with the hook is flattened and pressed out "so as to present a broad surface "to the opening of the hook when connected," but, "by turning the eye up at right angles, or nearly so, a narrow edge "is brought opposite the opening of the hook and may then "be easily detached therefrom."

The shape of the hook may be varied; the only necessary precaution is that the entrance or opening should be narrower than the before-mentioned part of the eye, "so as only to "admit the same sideway."

[Printed, 6*d.* Drawing. *See* London Journal (*Newton's*), vol. 25 (*conjoined series*), p. 310.]

A.D. 1844, January 16.—No. 10,019.

EMPSON, John Fielding. — "Improvements in the con"struction and manufacture of buttons and other fastenings "for dress." This invention comprises (1) the construction of flexible shanks; (2) the manufacture of covered buttons; (3) the forming of holes in metal buttons; (4) the manufacture of "sewn through" buttons; (5) the manufacture of shanks of braid, gimp, sewing silk, and like materials; (6) the manufacture of buttons of cylindrical, octagonal, and other figures; (7) improved hooks and eyes; (8) fastenings for stocks; (9) fastenings for trouser straps.

On September 15th, 1845, the Letters Patent granted to Mr. Empson were assigned to Mr. John Aston of Birmingham. Mr. Aston, finding "that the parts of the invention which are " claimed by the first, second, third, fifth, and sixth" claiming clauses "have not come into public use to any considerable " extent," disclaimed them.

Again having been advised that there was a doubt whether " that part of the said invention which is claimed in the fourth " claiming clause," namely the construction of sewn-through buttons with a woven fabric in the centre and metallic edges, was new, he disclaimed the same.

Again, having found that that part of the invention which is claimed "in the seventh claiming clause" is "not useful" he disclaimed the same. The Disclaimer and Memorandum of Alterations was stamped and enrolled on February 6th, 1851.

8. Fastenings for stocks:—One consists of two pieces of wire bent so that when united by their loops they form a double hook. One end of the stock is furnished with a single hole for the reception of one hook; the other end is provided with " a series of button holes" for the admission of the other hook.

Another is composed of a piece of wire bent into a loop in the middle (for attachment to one end of the stock); the ends form two arms with opposite projections thereon. To the other end of the stock is attached a plate carrying a loop for the passage of the arms when pressed towards each other.

9. Fastenings for trouser straps:—One kind consists of a hollow cylinder attached to each end of the strap and two balls fastened to each side of the trouser legs by rings. A circular opening in the cylinder admits the balls which then slide into slots cut on each side of the opening.

In another a plate perforated with a circular hole and a slot on each side thereof admits two buttons sewn to the trouser legs, "at points nearly opposite the ends of the slots."

[Printed, 1*s.* 4*d.* Drawings. *See* Repertory of Arts, vol. 9 (*enlarged series*), p. 229; Mechanics' Magazine, vol. 67, p. 536.]

A.D. 1844, February 6.—No. 10,036.

AINGWORTH, Benjamin.—"Improvements in manufactur-" ing buttons for wearing apparel." The first part of this invention consists in making buttons from compressed pulp. The pulp is pressed into a succession of moulds by means of punches, "each mould which is so used in succession being " somewhat smaller" than the preceding one. The material may be dyed, impregnated with size, &c., when in the state of pulp; after being coarsely moulded it may be impregnated with oil or varnish and be compressed again; and shanks of any kind may be inserted "at one of the intervals between the " successive compressions and made fast during subsequent " compressure." The painting, varnishing, or gilding is performed in the ordinary manner.

The other parts relate (with one exception) to covered buttons; some of them are considered by the patentee improvements on the inventions patented by himself and on those patented by Messrs. Sanders, Aston, and Chatwin.

1. The "internal metal back" is cemented to the disc or fabric "which is to form the flexible shank," and the covering for the back is made according to his "former Patent of " 1831;" the disc is of the same size as the metal back, " whereby material is economized," and the wrapping of the disc round the back is rendered unnecessary.

2. A disc of fabric covers the whole surface of the back, thereby "covering over that part of the flexible shank" which protrudes and allowing that part of the shank "to protrude " through the central hole of the said disc as well as through " the central hole of the collet."

3. "Coverings of woven fabric" are applied (in various ways described in the Specification) "to the backs of such covered " buttons as are designated edge pattern buttons."

4. Edge pattern buttons are made "with an internal metal " disc," which is bent so as to have "a circular recess at its " back for receiving the circumferences of the parts for the " back" and for receiving and "fastening the back part of the " cloth covering which is to cover all around the edge of the " circumference of the button and form edge borders or mar-" gins around the back as well as around the front." The different methods in which the covering may be applied are described.

5. Discs, cut from "two or more fold fabrics cemented "together," are used for the front or back covering or for both; if the disc is of suitable thickness and strength, it may form the shank as well as the covering for the back; the front disc may be embossed, &c.

6. For the backs of some buttons there is used "a compound "of pasteboard and strong woven fabric (suitable for forming "flexible shanks) cemented together."

7. In preparing circular discs to be used for internal shells, the thin metal round the circumference is folded so as to obtain "a border of doubled thickness of metal all round the circumference and a smooth rounded edge of folded metal all "round the exterior of that circumference."

8. The metal back is bent "so as to form a circular channel "all round its circumference for the reception of the circumference of the cloth covering for the front" or of both the coverings for the front and back.

9. Circular discs of "compound sheets of thick paper and "woven fabric (or two or more fold fabric) cemented together" are pressed into a suitable form for flexible shanks.

"A new kind of ornamental front" for buttons is made "by embossing discs of thin metal;" the ground of the pattern "is then to be filled up to an even surface all over the fronts "of the discs by japanning, and the whole reduced by grinding and polishing to an even surface."

The patentee describes at length each part of his invention.

[Printed, 1*s*. 4*d*. Drawings.]

A.D. 1844, February 21.—No. 10,064.

SHELDON, WILLIAM.—"Improvements in the manufacture of "buttons, and in japanners' ware, and articles in substitution "of papier maché." The body of the button is made from "a composition of fibrous and other materials combined with "glue or gelatine." The ingredients preferred are glue (8 lbs.) dissolved in water, cotton or flock (6 oz.), linseed oil (6 oz.), and "venus turpentine" (3 oz.); when these are well mixed together, there is to be combined therewith a powder composed of 40 lbs. of whiting or blue black (or a mixture of them), 5 lbs. of lamp black, and 5 lbs. of fine flour emery. The compound is rolled into sheets, and when in a fit state is cut into discs. The shank is pressed into the compound and "turned partly round" so that the projections may be well imbedded therein. The button is then pressed into shape "between plates with hollow dies sunk or formed therein." The excess of the material projecting at the edges being cut off, the button is coated with a mixture of white of egg and Prussian or Italian blue, and afterwards with a varnish of naptha polish in which a small quantity of Prussian or Italian blue has been ground. The button is next put into dies, such as are used in making horn buttons, and is then finished by removing the rough edges and varnishing the edges and back. Coloured buttons require colour to be mixed with the coatings of egg and varnish "together with or instead of the Prussian "or Italian blue."

A substitute for the ordinary button board is made from a mixture of 6 lbs. of stiff pulp, 1 lb. of sharps (separated from flour), 1 lb. of spent hops, 1 lb. of fullers' earth, and 1 lb. of flour, with or without glue. These ingredients are made into "a thick jet fluid composition" with the addition of water; the compound is run on to a sieve, then placed between felts or flannels, and pressed.

[Printed, 4*d*. No Drawings. *See* London Journal (*Newton's*), vol. 25 (*conjoined series*), p. 237.]

A.D. 1844, June 4.—No. 10,217.

ELLIOTT, William.—"Improvements in the manufacture "of covered buttons." The patentee saves labour, tools, and fabric by "so constructing and working the dies or tools" used in "covering the front shell and bringing the parts of a "button together" that at the same time "the button is "pressed into form." The tools are a lower die, a punch, and a tube for gathering the circumference of the covering fabric over the front shell. The punch and the tube are so constructed and worked "that the two together act the part "of the proper die or punch for causing the button to be "pressed into shape."

The covering fabric is laid face downwards on the lower die; a front shell placed on the punch is forced with the fabric into the die; the punch is raised; the tube is introduced into the die; the back shell carrying the shank is put in through the tube; the punch forces the shank and back shell into the front shell, pressing the edge of the front covering fabric into the front shell; the punch "then acts with the tube as one " die;" both descend together and press the parts of the button together and into shape.

In making "sewn-through covered buttons" a lower die, a punch, and a finishing punch are required. The covering material is laid on the lower die; the ring is placed thereon and forced into the die; the punch is raised; the finishing punch is introduced; the punch, descending again, gathers the edge of the material over the edge of the ring; and in its descent the finishing punch causes the edge of the ring "to " be pressed down into shape, shutting in the edge of the " covering material."

[Printed, 6*d*. Drawing. *See* Repertory of Arts, vol. 5 (*enlarged series*), p. 285; London Journal (*Newton's*), vol. 26 (*conjoined series*), p. 93.]

A.D. 1844, July 3.—No. 10,247.

NEWEY, JAMES GEORGE, and NEWMAN, JAMES.—"Im-" provements in fastenings for wearing apparel." The patentees claim improvements in (1) buttons of various kinds:—

Brace buttons consist of two shells having pieces cut out from the middle, such that when the shells are pressed together there is left in the middle "a strong hollow bar constituting " the requisite shank." Or pieces may be so cut out that there shall be in the middle a three-legged bar or two bars forming a cross. When there is only one bar, it may be strengthened by applying an "additional thickness of metal" around it.

"Sewn-through buttons" are made with metal rings or edges and centres of fabric.

Other buttons are made with backs having "oblong channels " formed therein" and with shanks across the channels.

(2) Coat fasteners:—Some consist of two buttons connected by a chain, each button having a spring inside to allow of elasticity between them; in others two buttons are connected by a wire spring contained within a flexible tube.

(3) Hooks and eyes:—The "hook portion" is "open so as " to allow the projection of the eye to pass between the two " sides of the hook."

(4) Trouser-strap fasteners:—Three kinds are described. The first consists of a slotted plate affixed to the trouser, and a plate affixed to the strap; the latter has a projection which can pass through the slot "when the strap is raised into a "horizontal position."

The second consists also of two plates; the one fixed to the trouser has an opening through it, which allows a projection on the upper part of the other to pass through; when the projection descends into the smaller portion of the opening, "lateral projections" prevent the plates from separating. A spring pressing on the projection prevents it from moving.

In the third the part attached to the trouser "has holes," and the part fixed to the strap "has a hole through and pro-"jections;" hence "these parts will not separate when "pressed on."

[Printed, 1*s.* 4*d.* Drawings.]

A.D. 1845, January 11.—No. 10,461.

MABLEY, WILLIAM TUDOR.—"Improvements in the manu-"facture of buttons from horn or hoof and other matters "requiring similar pressure, and in the manufacture of other "articles in dies from horn or hoof and other matters requiring "similar pressure." This invention relates to (1) constructing the dies so that they may be "held together after they have "been removed from the press;" (2) machinery for pressing horn, hoof, &c.; (3) cooling dies which have been used in a heated state for pressing buttons, or other articles of horn, &c.

1. The bottom die plate is furnished with registering pins and with a slotted third pin of sufficient length to project above the top plate when the dies are pressed together. A A key or cotter driven through the slot holds the die plates close together. This arrangement admits of modifications which are described in the Specification.

2. The lower end of "the levers of a toggle joint" is connected to a plunger; the upper end is pin-jointed to a bolt which slides in the top part of the framework. The upper part of the bolt is covered by a cap, and above the cap is a strong spring, "the ends of which pass through mortises "formed in projections of the frame" and are capable of being set down by screws. A cam operates upon a roller adapted "to the centre" of the levers, straightens them, and causes

the plunger to descend. A similar cam at the other side of the machine acts on the roller, causes the levers to return to their bent position, and raises the plunger. A sliding piece on the bottom plate of the machine carries the dies. Connected to the sliding piece are two vibrating levers, each carrying at its upper end a roller which is operated on by a separate cam; by means of one the sliding piece is conveyed to and from the plunger, and by means of the other a weighted bolt, "capable "of sliding backwards and forwards in a socket formed in "the framework," shoots forward and strikes the larger end of the key, thereby driving it through the slot and fastening the die plates tightly together. Rotatory motion is communicated to the machine by gearing at the upper part of the machine. The spring above-mentioned is of use "to allow for "the expansion of the machine caused by the heat necessarily "communicated to it by the dies, or for any other irregularity "of pressing." Instead of a spring the upper end of the toggle joint "may be loaded by means of weighted levers," or "an hydraulic apparatus" may be applied.

Machinery "upon the hydrostatic principle:"—The cylinder and ram are of the ordinary construction; the pump having "no valve at the foot" is worked through the agency of a cam. The top part of the ram is provided with a sliding piece whereon to place the dies. The sliding piece "is supposed "to be drawn out from beneath the press by hand in order "to feed the machine." A sliding bolt for the purpose of driving in the key when the die plates are pressed together carries at its outer extremity a roller which acts against a cam. The ram presses the dies "against the press-head." To prevent injury to the machine a safety valve "is placed upon the "pump pipe, loaded sufficiently to press the material in the "dies;" it will open and allow a portion of the water to escape, and the deficiency caused by the escape is supplied by means of a pipe "leading from a reservoir above and provided "with a valve which prevents the water from returning "through such pipe."

3. An endless chain is carried through a box; it passes round two rollers "to any convenient part" of the box, "where a channel is affixed which leads to a fan or other "exhausting or blowing apparatus placed in any convenient "situation." One of the rollers is caused to revolve slowly;

the dies are placed on the chain; they are conveyed through the box, "and the air being exhausted therefrom through the "channel, a rapid current of cold air will pass over them in "their progress." This arrangement may be modified; or the upper side of the chain may pass in contact with a chamber through which a current of cold water is continually flowing.

Each part of the invention is described at length in the Specification.

[Printed, 1s. 10d. Drawings.]

A.D. 1845, January 21.—No. 10,484.

CHATWIN, THOMAS TURNER, and SEYMOUR, GEORGE.—"Improvements in the manufacture of covered buttons." The disc for the front shell is of metal "about twice as thick "as that heretofore used." The disc, after being "drawn "through tools as is well understood" is annealed, and the raised edges are then turned over in dies. The covering material is placed in a lower die and "retained by the outer "ring of the covering tools." The punch of this die is made of steel, and "is converted into a magnet." The advantage of magnetizing the punch is that "it aids in ensuring the cor-"rect placing of the front shell on the centre of the covering "material;" the shell being attached to the punch when descending, "the punch is not liable as it otherwise might be "to act on the partly turned over edge." The punch descends and carries down the shell and the covering material into the lower die; "the tight fitting of the parts" in the die allows the punch to rise "without carrying away the shell;" the ring is removed, a tube with the back collet is inserted, and the "parts are combined" in the usual way.

The covering of the back is fastened to the collet or back shell by turning over the edges of the metal and then shaping them in dies.

[Printed, 10d. Drawings. *See* Repertory of Arts, vol. 6 (*enlarged series*), p. 224.]

A.D. 1845, May 22.—No. 10,680.

BRAITHWAITE, AUGUSTUS SEPTIMUS.—(*A communication.*)—"Improvements in buckles, clasps, and other fastenings." The fastenings described are buckles, a guard to be attached to one description of buckle, and metal buttons.

Buckles :—(1) The parts are called by the inventor "the "larger wing," tongues, "the smaller wing," pendent loops, and rollers; they are all (except the rollers) stamped out of metal "at one operation," and then fashioned "in certain parts "by hand or hand tools." The larger wing becomes a rectangular frame; it carries on the upper side the smaller wing (oval in shape with the outer circumference pressed down into a straight line), and two tongues bent into a "hooked form;" on its lower side are two loops twisted "one half turn round" and pierced for receiving the axles of the rollers. Sometimes there is only one roller attached to the loops by a rectangular piece of wire "cut through in one part." Two figures in the annexed sheet of drawings show this buckle attached to "double end braces." A "short curb piece of the same "material as the brace" is so fastened to the double end and arranged as to leave the brace free to move a certain distance but no farther. Buckles "of any other variety of form" may be made on this "system of construction."

(2) A buckle, "extremely simple," and allowing the article to which it is attached "to be released from it with great "readiness," consists of a frame and a hook hanging down from the upper part of the frame. "By pulling up" the article the hook catches one of the eyelet holes in the article, and "by simply pulling down the end" of the article it is released. A small roller may be inserted across the open part of the frame.

A guard to be attached to the buckle last described consists of a plate perforated through the middle and slit upwards from the perforation. "The under part of the buckle is dropped "between these two pieces, which being then brought together "take fast hold of the buckle." The lower part of the guard is sewn to the brace, belt, &c.

The button is composed of a shank and under shell made of iron or other low priced metal or substance and of an upper shell of steel.

[Printed, 8*d*. Drawing.]

A.D. 1845, June 3.—No. 10,699.

READING, John.—"Improvements in fastenings for articles "of dress." This invention comprises (1) a stock fastener,

(2) a substitute for a clasp, (3) a substitute for a hook and eye, (4) a substitute for a buckle.

1. A rack is attached to one end of the stock, and a plate to the other end. On the plates are guides for the rack, a bolt, and a spring. One portion of the bolt "slides in front of the "plate," another portion "slides at the back," and the lowest portion "slides in an opening or slot in the plate." The lowest portion is prevented from falling from the opening by a "guide "plate fastened to the back of the plate." On the end of the lowest portion is a tooth, which engages in the teeth of the rack by the pressure of the spring. The parts are separated "by "applying pressure against the upper end of the bolt."

2. One plate has "a rectangular opening" in it and a spring which "presses against the said plate immediately opposite to "the opening." The other plate has one part "raised above "the plane of the other portions thereof to a height somewhat "greater than the thickness" of the metal. The raised part is introduced under the spring and pushed until it is opposite the opening; the pressure of the spring causes the raised part to enter the opening. To effect a separation the plate having the raised part "must be depressed so as to form an angle" with the other plate. Two modifications of this arrangement are described in the Specification. This clasp may be "applied "to a trouser strap."

3. The part to constitute the eye is a piece of wire bent somewhat into the shape of an ordinary eye with one end passing-up the middle and acting as a spring. The hook is bent in such manner "as to form a loop at one end." The parts are united by pressing the loop against the under side of the spring so as to raise it; the hook is then inclined; the upper edge of the loop passes the end of the spring, and on bringing the parts again into the same plane "the two parts "are fastened securely together."

4. The substitute is described as affixed to a brace:—A rectangular plate having a guide at each end is attached to the end of the brace. A like-shaped plate of such size that it slides in the guides and carrying two studs is attached to a web or band "of a length equal to the range of lengthening to be "given to the brace." One end of the web is connected to the brace at such a part that when the brace and web are stretched tightly the plate carrying the studs "is immediately

"over" the other. The removable end is a leather strap perforated to correspond with the studs. The studs are thrust through two of the holes in the strap; the plate and strap are placed on the other plate, and the former "is introduced into "the guides" and pressed in until its shoulders come into contact with those of the latter.

[Printed, 8*d*. Drawing.]

A.D. 1845, October 16.—No. 10,883.

ELLIOTT, WILLIAM.—"Improvements in the manufacture of "buttons." The first improvement relates to "covered "buttons wherein grooved or hollow rings are used." The "inner wall of the ring" is made higher than the outer wall, "by which the covering of the backs of such buttons is "facilitated and improved," and the inner wall "is bent "slightly in towards the outer wall." Sometimes the button is made "with a projecting tuft or nipple at back to act as a "shank," allowing the button to be sewn on without passing the needle through and through the button. The tuft is made by pressing out the back fabric and introducing a filling piece, and if the button is a "washing button" the filling piece should be waterproof.

The second consists in forming grooves or channels in the collets of covered buttons having flexible shanks, and in combining flexible shanks with metal shanks:—The metal shank is formed by "pressing part of the centre of the collet" into a shank; the flexible tuft or shank is applied "through the "opening caused by forming the metal shank."

The third consists in using "a flexible shank of india-rubber "suitably covered by braiding or otherwise;" this shank is "drawn through the openings in the back shell and fastened "by cement or otherwise to the filling piece of button "board."

The fourth relates to a mode of making buttons, "the "covering being all over the back and front:"—A "solid "filling piece" of button board or panel board is employed; it is moulded or pressed into form and covered at the back with a woven fabric "without the intervention of a disc or "shell of metal between it and the covering fabric." The patentee claims here "the combining of double woven fabrics "as a back covering fabric."

The fifth relates to making paper, millboard, or panel board buttons :—The material saturated with oil is cut into discs, in each of which "there is an indent produced at the back" to receive either a metal or a flexible shank. The button is varnished and pressed in dies. A metal shank is fixed as in horn buttons; a flexible shank requires the addition of a back metal shell, a filling piece, and a disc of metal.

The sixth relates to "composition buttons :"—About 20 lbs. of dyed pulp (as dry as possible), 2 lbs. of glue dissolved in 1 quart of water, 2 quarts of tar or black varnish, and 8 lbs. of powder ("consisting of 10 parts whitening and 1 part lamp "black") are mixed together. Portions (about 8 oz.) are put into metal moulds and pressed into sheets somewhat thicker than panel board. Discs are cut out, and metal shanks are pressed into the backs. The buttons are then pressed into shape, dried, varnished with a spirit varnish, and finished as horn buttons. If a flexible shank is to be used, it is to be applied "after varnishing and before the last pressure."

[Printed, 1*s*. Drawings.]

A.D. 1845, December 10.—No. 10,991.

LAWRENCE, HENRY.—"An improved buckle suitable for "harness and other purposes." The patentee describes a buckle (1) for harness, (2) for machinery, (3) for belts for fastening garments.

1. This is composed of two main parts united by a cross pin. One part is formed of two cross bars in different planes and joined by two side pieces; "some bearing of the harness" is fixed to the lower of these bars by looping it round the bar. The other or buckle part is of the usual "quadrangular form," but bent into a "double curved shape." The free end of the trace or strap is passed under the outer bar of the buckle part, through the eye, through the space between the pin and the upper cross bar, and through a loop on the fixed end. For greater security the upper cross bar "is ridged longitudinally "on its under surface." For leathers of extraordinary width the eye of the buckle part is provided with a cross stay, over which the trace is drawn before passing between the pin and upper cross bar. The buckle part may have two side bars for the attachment of other straps.

2. The buckle part is hinged to the other parts by two pivots, and the fixed end of the strap is secured to the lower cross bar by metal pivots.

3. This buckle consists of "an open quadrangular piece" carrying a cross bar to which one end of the belt is secured, and the bearings of "a bent axis" whereon a metallic spring clasp turns, having "a finely serrated edge." The spring of the clasp is "a metal piece which projects from the back of "the serrated edge and bears upon the axis by means of a "curved or claw end." The clasp "lays firm hold of the "other end of the belt when it is drawn through the "buckle."

Springs of gutta percha may be used instead of a metallic spring by making the buckle frame with two pins projecting inwards and the clasp with two projecting outwards, each pin "having a flanged or projecting head." A ring of gutta percha is passed "round each pair of these pins" and under the cross bar. Or only one ring may be used; in this case the bar on which the clasp turns has a tongue "projecting laterally and "downwards," the clasp a similar tongue "projecting in an "opposite direction;" the ring "is slipped over the tongues" and "performs the office of the two springs."

[Printed, 8*d*. Drawing. *See* Patent Journal, vol. 1, p. 60.]

A.D. 1846, January 13.—No. 11,037.

BENBOW, THOMAS MOORCROFT.—(*Partly a communication.*)—"Improvements in fastenings for surgical and other "bandages, and for articles of dress." The first part of this invention relates to fastenings which are applicable to stays as well as to bandages:—A strip of whalebone or metal is enclosed on each edge within the fabric to be united. Each strip has several semicircular pieces cut out of the outer edge, and at each indenture is fixed an arm carrying a pulley so arranged that the pulleys "do not project or project but "slightly beyond the edge" of the whalebone or metal. The cord is connected at its ends so as to form an endless cord; "beginning at the upper part it passes over the "two upper pulleys;" then from one side to the other "over "alternate pulleys to about the middle," where on each side "there are eyelet holes through which it passes, and thence "back again over the other pulleys." The stays are fastened

" to any required degree of tightness" by tying together the portions of the cord left beyond the eyelet holes.

The second part relates "to the formation of hooks" to fasten articles of dress:—Additional fastening parts "are " placed close to the part of the hook which is turned up to " pass into the eye," an arrangement which prevents the hook from hanging loosely.

A hook, particularly applicable for fastening the parts of gloves together at the wrist, "is formed with an eye at the " back;" or an equivalent for the eye may be made "by the " bending of the stem." A tassel or ring is attached to this " eye or bend, and by pulling it "the hook will readily be " released from its eye."

The third part relates "to the formation of eyes used with " hooks":—The parts by which the eye is fastened to the garment "are brought close together," and the part over which the hook passes "is shortened so as to prevent the collapsing " of that part."

The fourth part consists in covering springs "used in " making caps and other articles of head dress to retain them " on the head;" these are described in Division I. of the present series.

[Printed, 6*d*. Drawing. *See* Repertory of Arts, vol. 8 (*enlarged series*)' p. 175; London Journal (*Newton's*), vol. 29 (*conjoined series*), p. 99; Patent Journal, vol. 1, p. 168.]

A.D. 1846, January 20.—No. 11,055.

BURKE, William Henry.—"Improvements in the manu" facture of fabrics, which may if required be made air and " waterproof." The "second feature" of this invention relates to the manufacture of a fabric "fit for the coverings of " books, boxes, envelopes, buttons, and other purposes." The fabric is composed of paper and "a material known as " Clark's cloth." An equal length of each, wound on separate rollers, is passed between calendering rollers. "At the pinch" of the rollers, along their whole length, is placed caoutchouc or other gummy material prepared and softened "as is well " understood;" by this process the surfaces become cemented together. Or a fleece of cotton wool may be united to a length of paper in a dry state by pressure. The combined material with a layer of caoutchouc or other adhesive matter on the fleecy surface is passed between calendering rollers, and the result is a fabric suitable for the above-named purposes.

[Printed, 8*d*. Drawing. *See* London Journal (*Newton's*), vol. 30 (*conjoined series*), p. 81.]

A.D. 1846, February 11.—No. 11,088.

ROWLEY, CHARLES.—"Improvements in buttons and other "fastenings for wearing apparel, and in the machinery for "manufacturing parts of the said fastenings." The improvements claimed are :—

1. Four-hole buttons :—A perforated disc of bone, wood, &c. is put into "a stamped metal shell;" the shell is closed in at the back; and in order to give the buttons "a more sightly "appearance," the patentee applies "discs made of metal, "bone, porcelain, or other material, such discs having loops "at their back, through which the needle is intended to be "passed;" or the thread "may be sewn through the disc."

2. Applying to horn buttons a shank patented by Messrs. Rowley, Chambers, and Franklin on August 27th, 1841, No. 9058 :—A thin disc of metal is placed in "the sunken part "of the back" before the shank is put in; this prevents the horn from "working up into the shank during the process of "pressing the soft horn."

3. Applying shanks to pearl buttons :—A wire shank, soldered to a disc of metal "stamped up into a convex form," is dropped into the recess at the back and by pressure applied to the convex side is flattened and expanded.

4. A new metal back for covered buttons which have flexible shanks :—Teeth are cut round the hole of the button back to prevent the shank from being pulled out.

5. Shirt buttons :—A metal eyelet is introduced; the woven fabric is "gathered in and held between the eyelet and the "back ring by the eyelet being thrown over and pressed "down." Two modifications of this improvement are described in the Specification.

6. Trouser buttons, whether made of metal combined with cloth for the back or of pearl, bone, wood, &c. :—The shell is stamped and pierced "so as to have a centre hole, and then a "raised ring or bar, and two or more holes on the outside of "the bar." If the button is made with a cloth back, the cloth is stretched and held in by a ring of round wire or by a

flat ring. The thread "rides" on the raised ring or bar when the button is sewn on.

7. Silk and other fabrics used in covered buttons are imitated by paper stamped or embossed and strengthened with a back of calico or other inexpensive fabric. Gimp and braid are imitated in like manner.

8. Shaping buttons "into various configurations" by the aid of an additional pair of dies:—The upper and lower dies are cut with "raised and sunken indentations;" the button is compressed therein, and the "once even face" will become "crinkled and uneven."

9. Applying covered studs to covered buttons so as to produce "centre pattern buttons":—The face of the button is pierced to receive the shank of the stud; the shoulder of the stud "will find a resting place on the face of the shell "of the button" while it is being riveted or fixed on to the same.

10. "Leather fastenings for the fronts" of trousers, intended to save "the tedious process of working the button holes," are cut out and pierced "at one operation by a tool and "mallet."

11. Shawl and cloak fasteners:—The fastener is composed of two discs and a chain. Each disc carries at the back one or two curved pins or a shank; one end of the chain is secured to one disc; and a link of the chain passes into a hook made fast to the other disc. "There is only room between the hook "for the link of the chain to be flatways, and therefore the "chain cannot be pulled through." Sometimes the hook is made open enough "to hold the link of the chain broadways," and with "a pin in the hollow," which entering the link "will hold it in any required position."

12. Trouser straps:—For each trouser leg and strap two pairs of plates are used; one of each pair carries a projecting pin, having a head "broader one way that it is on the other;" the other of each pair is made with an opening which admits the pin head flatways and allows the head (when in) to be turned at right angles. Sometimes the leather ends of the strap are sewn to the trousers, and only one of these connecting parts is required.

13. Glove fasteners:—An eyelet is made fast on each side of the wrist; a cord is passed through each so that its ends

hang down outside of one of them; each end carries a tassel, and near each end is a knot. The glove is fastened by pulling one of the ends until the knot near the other end presses against the eyelet on its side of the wrist. This arrangement admits of modifications described in the Specification. The cloak fastener may be applied to gloves.

14. Buckles and machinery for making them:—The machinery for making the frame consists of an iron frame "having a mandrel working in split collars" and set in motion by a handle and a wheel which is brought to bear against the mandrel by a weight or pressure from a lever. One end of a wire is put into the slot of the mandrel; the wire is bent; the wheel is brought to bear against it, and the wire is "bent "into a continuous square spiral form." Portions are cut off, and the ends are (or are not) soldered together. The tongue is made at one operation in suitably shaped dies.

[Printed, 1*s.* 6*d.* Drawings.]

A.D. 1846, March 18.—No. 11,135.

HANCOCK, THOMAS.—"Improvements in the manufacturing "and treating of articles made of caoutchouc, either alone or "in combination with other substances, and in the means used "or employed in their manufacture." The other substances named are fibrous substances, linen, cotton, pitch, resin, wood, and cork dust.

The first claim is for shaping articles from combinations of caoutchouc with other substances in or upon moulds, plates, or forms, and retaining the articles therein or thereon during the process of vulcanizing, "whereby the form of such articles "is rendered permanent."

The second, for shaping articles of caoutchouc in or upon engraved or otherwise ornamented plates or moulds, and after forcing the caoutchouc into the moulds by pressure and heat, "submitting the whole by means of a water or steam bath or "any other suitable mode to a high temperature, whereby "the articles are sufficiently set to be removable from the "moulds." The articles may afterwards be vulcanized if desired.

The third and last, for manufacturing articles by combining caoutchouc with some of the above-named substances, and then vulcanizing them.

Among the articles manufactured by the patentee are " embossed fancy articles of dress, bracelets, collars, ornamental edgings and borders, military epaulettes, belts, and other similar articles, imitations of crape, and of cord, lace, " and fringe."

[Printed, 4*d.* No Drawings. *See* Repertory of Arts, vol. 10 (*enlarged series*), p. 28; Mechanics' Magazine, vol. 45, p. 400.]

A.D. 1846, March 25.—No. 11,140.

ILES, Charles.—" An improvement in the method of carding " certain descriptions of dress fastenings and other articles, " and in the fabrics employed for that purpose." In carding hooks and eyes the surfaces of the card or of the substitute for card are perforated with cross cuts or other cuts; the thread used is conducted "by a suitable instrument" through the cuts and is formed into loops through which the hooks and eyes are introduced by hand. The cuts are usually made by a fly press and cutters. The apparatus for carding consists of a bench on the head of which the card is placed. The " instrument" is "a blunt blade made hollow on the upper " part so that the thread may rest thereon and be raised up " thereby through the card;" it is worked up and down by a treadle through a tube fixed in the bench, and a spring presses it back when the foot is removed from the treadle. The thread is brought from a bobbin, "the pulley of which is pressed " on by a spring to keep the bobbin from turning unless the " thread is drawn on;" it may be drawn tight at any time by a wheel on the axle of the pulley. In order that the card may be correctly held, a gauge is "affixed on to the bed in " such manner that the blade will receive on it one of the cuts " in the card or surface, by which the surface will be so held " that another of the cuts will come opposite the blade;" and when the blade is pressed up by the treadle, "it will come " up through that other of the slits in the surface, and in " doing so it will bring up the thread;" in descending it will leave a loop on the upper surface of the card.

In carding buttons perforations not quite so large in diameter as the buttons are punched through the card or its substitute. If the perforations are countersunk, they are filled with buttons (face downwards), and a surface of paper or fabric is pasted over the back of the card. If the perforations are not countersunk, "a series of threads are then placed over the card so as "to lie across each perforation at right angles;" the buttons being inserted and pressed down "will carry down a quantity "of the thread;" a surface of paper or fabric is then pasted at the back.

Instead of card or cardboard, the patentee uses sheets of calico or other fabric stiffened on one or both sides with paper, pulp, or other matters.

[Printed, 1*s*. 4*d*. Drawings.]

A.D. 1846, March 25.—No. 11,149.

SMITH, Charles.—"Improvements in cooking and culinary "utensils, and methods of heating and suspending or fastening "articles of domestic use, and similar purposes." Amongst the many inventions claimed by the patentee are methods of "fastening stays from back to front," and of making "metal button holes and hook-and-eye fasteners" and dress-suspenders.

The stays have fastened to each side at the back laces or tapes, which crossing at the back are brought to the front and buttoned or otherwise secured to elastic straps.

The buttonhole (or substitute for an eye) is cast in a mould or stamped out of a tin plate; it has as it were two slots connected at one end. The hook is formed with a shank which enters one slot and passes round into the other. Sometimes one of these eyes is fixed on each side of the fabric, and the intervening fabric is cut away. The eye may however be made in a variety of fanciful shapes, for example, as a hand with one finger crooked, &c. &c.

Dress-suspenders consist of any two figures, a part of which can be fashioned to serve as a hook and eye. This "is susceptible of a vast variety of forms."

[Printed, 3*s*. 6*d*. Drawings. *See* London Journal (*Newton's*), vol. 29 (*conjoined series*), p. 356.]

A.D. 1846, May 22.—No. 11,215.

LUTWYCHE, Charles Thomas. — "Improvements in the "manufacture of porcelain buttons." These buttons are made (1) with ordinary metal or flexible shanks, (2) with metal or flexible shanks "so as to sew through and through," (3) with porcelain shanks.

1. The porcelain, being mixed with oil or water and properly prepared for use, is formed into shape in moulds which are kept "constantly warm" to prevent the blanks from adhering to them. The blanks, after leaving the moulds and being sufficiently dried, are fired; they are generally heated to a red heat for from 2 to 3 hours. When cool, they are turned with "an under cut or cavity in them"; the edges are dressed, and they are again fired "and finished in every "respect as is usual with porcelain." The metal shanks consist of eyes soldered into discs which are domed or raised, then put into the cavities and pressed down so as to spread out the edges. The flexible shanks are secured in domed or slightly conical collets which are put into the cavities and treated in the same way as the discs.

2. The porcelain is shaped into an undercut ring for the reception of a perforated metal shank or of a flexible shank secured in a collet.

3. The porcelain is made into balls, which are pressed in dies, the upper die having sunk in it the pattern for the front of the button, the lower die the shape of the back, a recess to form the projection of the shank, and a hole for the passage of a wire which makes the eye of the shank. The button thus formed is dried and fired. The patentee prefers however "partially firing the buttons" as mentioned in the first part, "and then dressing the sharp edges, after which they are "treated as is usual with porcelain."

[Printed, 8*d*. Drawing. *See* Repertory of Arts, vol. 9 (*enlarged series*), p. 138.]

A.D. 1846, May 28.—No. 11,227.

ASTON, JOHN.—"Improvements in buttons and in ornaments "for dress." The buttons are "principally intended and "suitable for ladies' dresses," and the object of the patentee is "to avoid the use of metallic substance or shells heretofore "used." The upper part of the blank is a disc of millboard known as "three pounds to the sheet"; the lower part of pasteboard known as "a half pound" to the sheet. The two parts are pierced with a hole in the centre through which is forced a small piece of canvas to form the shank. The parts are united with cement and pressed into the shape of the intended button, forming the mould thereof. The face is of satin or other fabric coated at the back with a solution of india-rubber. The discs are cut out when the solution is dry. One of the discs is placed on a die heated to about 120° Fahr. ; a metal ring is laid on the disc ; the mould coated with the solution is put into the ring, and a punch forces down the mould and causes it to adhere to the disc. The edges of the disc are turned down flat upon the back of the mould in another heated die, and a disc of fabric, coated with solution and laid upon the back of the mould, is forced by a second application of the punch to adhere, "and the button is then " finished."

The "ornaments for dresses" are covered buttons of various shapes and decorated with an edging of gimp, braid, network, &c. The edging is attached either by means of a metal ring and cement or by sewing. The patentee describes four methods of making these ornaments. He sometimes introduces a central ornament into the face of a button.

[Printed, 1*s.* 6*d.* Drawings. *See* Patent Journal, vol. 2, p. 478.]

A.D. 1846, August 11.—No. 11,332.

ILES, Charles. — "Machinery and apparatus for making " certain descriptions of dress fastenings, which machinery " and apparatus, or parts of which machinery and apparatus, " are applicable to other useful purposes." The improvements relate to a combination of "parts to form presses to work dies " for cutting out and shaping and putting together parts of " buttons and other dress fasteners." The apparatus is described for cutting-out and shaping the metal discs used for button shells ; the various parts are fully explained in the Specification, but the novelties claimed are (1) working dies by combining sliding plates (acting by inclined surfaces) with punches, (2) giving motion to such sliding plates by sliding bars, (3) "the mode of putting the press into and out of " action."

The cams required for communicating motion to the several parts are mounted on a hollow main shaft. The lower die is fixed on the bed plate of the machine ; it is formed with an upper and a lower cavity. There are two punches, one sliding within the other ; the outer one cuts out a disc and forces it into the upper cavity ; the inner one forces the disc through the lower cavity, whereby "the edge of the disc will be turned "up or raised all round." The outer punch is carried by a sliding plate guided by the framing and carrying two rollers which are acted upon by inclined surfaces on a plate. This plate "has a sliding motion given to it" by means of another sliding plate or bar; these plates have inclined surfaces, between which there is a roller "guided endwise by the parts of "the framing" and "prevented from falling downwards out "of its place" by a projection. The last named sliding plate or bar rises by means of a cam, operates on the plate and forces the outer punch into the die. The inner punch "is acted upon "similarly" to the outer one, there being a like arrangement on "the left-hand side framing of the machine." The punches are raised by springs. The patentee prefers "that the metal "or other material be fed into the machine," and he describes an apparatus for that purpose.

There is only one drum or pulley on the main shaft. A bar passes through the main shaft; it slides therein by means of a lever. A pin screwed into the bar passes through a slot in the main shaft "and enters a groove formed around the internal "surface of the boss of the driving drum"; the drum may therefore be slided on the main shaft by means of the bar, "while at the same time it travels round independently." The drum is connected to the main shaft by an arm on its boss being brought against a stud from the fly wheel affixed to the main shaft. By this arrangement "the stopping and starting" of the machine will be more quickly effected.

[Printed, 2*s*. 6*d*. Drawings.]

A.D. 1846, November 19.—No. 11,455.

BROCKEDON, William, and HANCOCK, Thomas.—"Improvements in the manufacture of articles where india-"rubber or gutta percha is used." The processes of vulcanizing, purifying and colouring these substances (included in "the term change") are those described in the Specifications of Letters patent previously granted to Mr. Thomas Hancock and to Mr. Alexander Parkes.

Leather, cloth, linen, silk, and other fabrics and materials are rendered partially or entirely waterproof "by coating their "surfaces or uniting two or more of them together with "caoutchouc, gutta percha, or a compound of these matters "in a state of solution or otherwise, as described in the

" patent of the said Thomas Hancock." The change is then produced "by immersion." The difference between the present and the former inventions consists in operating " on the manufactured article in place of acting on the raw " material of caoutchouc, gutta percha, or the compounds of " these materials." To protect substances "liable to injury " by contact with the changing solvents" they are coated or saturated with "glue size" which is afterwards removed by rinsing in warm water, or with "an aqueous solution of lac" which is afterwards removed by any suitable alkaline solution.

From the foregoing materials the patentees make "a great " variety of articles," among which are mentioned "a variety " of embossed articles, such as fancy articles of dress, " bracelets, ornamental edgings and borders, imitations of " crape, fringe, and lace."

If the exterior of the article is to be of cloth or other texture, they "protect the fabric when producing the change from " the action of the changing agent by forming the air-proof " lining in such a manner as to cover the whole interior " of such fabric and obtain the change by pouring in the " changing solvent, allowing it to remain only for the necessary " period." When the articles "require seams or to be " otherwise sewed together," the waterproofing solution employed in such parts "will require afterwards to undergo the " change by applying the converting solvent with a brush or " otherwise."

[Printed, 6*d*. No Drawings. *See* Repertory of Arts, vol. 10 (*enlarged series*), p. 103; Mechanics' Magazine, vol. 46, p. 504.]

A.D. 1847, April 20.—No. 11,664.

KENRICK, SAMUEL.—"Improvements in preparing or forming moulds for casting metal." One of the many improvements claimed in this long Specification consists in producing " an odd side or a substitute therefor" (for a set of moulds suitable for casting nails or four-hole buttons), "which will be " more permanent than can be made when the odd side is " formed with sand in the usual manner." This is effected by casting soft metal "into a plate or plates, the flat surface or " surfaces of which is or are hollowed with a cavity or cavities " adapted to receive one half of the thickness of the patterns,

" so that they will be imbedded in a cavity or cavities in the " soft metal, in the same manner as they would be imbedded " in the rammed sand of the usual odd side." The castings being fastened upon a board or a plate of metal "form an odd " side or a substitute for an odd side."

Another consists "in casting buttons with shanks previously " formed and inlaid into the mould, so that the root part of " each shank will become fastened into the metal at the back " of each button when the same is cast." The root part of the shank is lodged in a cavity at the back of the pattern "by first " gathering shanks on the teeth of a gathering comb," then " by aid of a tilting frame" transferring the shanks "to the " teeth of a distributing comb," and then depositing them by drawing them off the teeth of the distributing comb "by aid of " a false head with channels therein which conduct the shanks " properly into their several places" in the cavities at the back part of the patterns.

The Specification contains a very full description of the construction of the odd side, the gathering and distributing combs, the tilting frame, and the false head.

[Printed, 4*s*. Drawings. *See* Patent Journal, vol. 3, p. 571.]

A.D. 1847, May 22.—No. 11,707.

NICOLL, HENRY JOHN.—"Improvements in garments, and in " pockets, bags, and other receptacles." Top coats are made " with extra folds or linings" which are sewn or buttoned to the top and bottom of the coat in such manner that, when they are folded, they lie flat inside the coat, and when unfolded they "form coverings for other parts of the body." The top folds when raised up can be buttoned into a hood; the bottom folds when let down form a covering for the knees and legs. These folds are made of the same material as the coat and are lined in such a way that when they are folded the cloth will be outwards.

The folds forming a hood may be attached to paletots, frock-coats, dress-coats, and cloaks.

Pockets and bags are made "with small but elastic orifices." The opening or top is covered with an elastic material (by preference vulcanized india-rubber) "in which is made a small " orifice;" or "a spring or sphincter of such elastic material" is attached to the top "so as to keep such orifice closed or "nearly so when not in use." These pockets may be applied to all articles of dress, to reticules, and to pocket books.

[Printed, 1*s.* 10*d.* Drawings.]

A.D. 1847, May 27.—No. 11,720.

McEVOY, Henry.—"Improvements in the manufacture of "and in the packing hooks and eyes." The hooks are made either of wire or of sheet metal; the portion which is attached to a garment is "carried beyond the hook," and the extremities of the arms are turned round inwards towards each other. This peculiarity of construction "gives greater security in its "attachment" besides possessing other advantages.

The eyes are either ordinary eyes but "less bent," or loops made with needle and thread, &c., or oval eyelets.

The apparatus for packing "consists of a pair of jaws" with a tightening screw. On the lower part of one of the jaws is a neck, "by which the jaws are supported with a capability of "turning loosely in the table or frame" of the apparatus. On the neck (under the table) are two pulleys; one has one end of a cord fixed to it, the other end being attached to a spring, "which has always a tendency to draw the jaws towards "the left hand." The other pulley has one end of a cord fixed to it, the other end being "attached to the upper end of "a lever, which at its lower end turns upon a hinge joint" while the other end rests against a stop under the table.

The attendant places a piece of bent wire between the jaws and puts on it a hook and an eye or a pair of hooks; he then with his knee "moves the upper end of the lever so as to bring "it against the stop, whereby the jaws will be turned half "round"; he then puts on the wire another hook and eye or a pair of hooks, "and they will lie on the opposite side to "those first applied"; he now allows the upper end of the lever "to come back against the stop by the action of the "spring, which will bring the jaws into the first position." When sufficient hooks are placed on the wire, it is taken out of the jaws, and its ends are turned down.

[Printed, 1*s.* Drawings. *See* Patent Journal, vol. 4, p. 246.]

A.D. 1847, August 4.—No. 11,830.

BOYLE, Arthur.—" Improvements in the manufacture of " buttons." This invention relates to a " preparatory process " for making a brace or such like button, or else for making " the back of a covered button."

A piece of wire or thin metal rod is bent into a circular shape, the middle or one of the ends forming a cross bar or diameter to the circumference; it is then annealed and afterwards shaped in dies. The under die should (by preference) be formed to correspond with the figure and character to be given to the back of the button; the surface of the punch should correspond with the face to be given to the front. The cross bar forms the shank; it may either remain straight or be bent " so as to stand off from the back." The surfaces may be made more or less ornamental by forming the faces of the dies accordingly.

When the part produced as above described is to constitute only the back shell and shank, the front is made from " another " shell of metal, as is well understood."

The front of the buttons may be " covered with woven fabric, " as is well understood."

[Printed, 6*d*. Drawing. *See* Repertory of Arts, vol. 11 (*enlarged series*), p. 161; Patent Journal, vol. 4, p. 270.]

A.D. 1847, September 16.—No. 11,869.

HANCOCK, William.—" Improvements in bolts, locks, and " other fastenings." The patentee claims twelve improvements, of which only the eleventh belongs to the present series, namely " a new button fastening " particularly applicable " wherever there is a great strain to be withstood and " much strength required."

The button is (by preference) of metal " with the usual " face." A short shank is " cast on the centre of the back of " the face." In turning the button after casting, a pin is formed " at the back end of the shank," leaving a shoulder " at a proper distance from the back of the face to form a base " to rivet on." Sometimes a thin plate is put on the shoulder for the like purpose. A piece of strong cloth, cemented to a piece of linen or sheet india-rubber and of about the size of the face of the button, is pierced with a hole in the middle and passed on to the shoulder. A small metal plate or a small piece of sheet india-rubber is now put over the back of the cloth, and the shank is riveted to it.

The button is attached to the garment "by passing the face "of the button edgwise through a small slit or eyelet hole in "the garment from the back to the front" and by securing the cloth at the back through and through to the garment.

[Printed, 1*s*. 4*d*. Drawings. *See* Patent Journal, vol. 4, p. 448.]

A.D. 1847, October 21.—No. 11,917.

FORSTER, Thomas.—"Improvements in combining gutta "percha with certain materials, and in the application thereof "to waterproofing fabrics, and in the moulding various articles "therefrom, in finishing the surface of articles made from "gutta percha or gutta percha combined with other materials, "and in cleansing gutta percha." Among the claims of the patentee are (1) one for combining gutta percha with animal charcoal, ground whalebone, hydrate of sulphur, fragrant essential oils, musk, tonquin beans, orris root, or gum benzoin, and applying them alone or in combination with caoutchouc or other matters to fabrics.

(2) One for combining gutta percha with ground bones, horns, hoofs, whalebone, or shavings of these matters, or animal charcoal, hydrate of sulphur, with or without perfumes or colouring matter, and applying the same alone or in conjunction with fabrics, or veneers of wood, to the manufacture of various articles.

(3) One for uniting with gutta percha fabrics previously rendered waterproof by any of the usual methods.

Buttons are mentioned among the articles to which the invention is applicable. They are cut or stamped out of wooden or felted fabrics, paper, leather, or scale board, coated and afterwards combined according to the thickness required, or they are moulded therefrom. The coating may be either a combination of three parts of gutta percha, 1 part of animal charcoal, $\frac{1}{16}$ part of white arsenic or other mineral preservative of vegetable matters, and a solvent if necessary; or a combination of 4 parts of gutta percha, 1 part of Cornish white, and 1 part of hydrate of sulphur. If the buttons are to be embossed, a thick coating of the composition is laid on the outside of the combined fabric, and heat and pressure are applied. If the buttons "are required to stand wet," the fabrics are saturated with (by preference) boiled linseed oil before they are coated.

[Printed, 8*d*. Drawing. *See* Repertory of Arts, vol. 11 (*enlarged series*), p. 303; Mechanics' Magazine, vol. 48, p. 450; Patent Journal, vol. 4, p. 574.]

A.D. 1847, November 4.—No. 11,941.

DURAFOUR, JEAN MARIE.—"A new fastening or improved "system of lacing without eyelet holes."

[No Specification enrolled.]

A.D. 1847, December 31.—No. 12,009.

JENKINS, MARY.—"Improvements in the manufacture of "pins, hooks, eyes, and other fastenings." The improved dress fastener, intended as a substitute for the ordinary hook and eye, "consists of two wire loops or nooses" which take into each other. One loop may be of thread or silk and the other of wire. The patentee does not confine herself to shape or form of loop; she claims for her invention that it will not become unfastened "by any ordinary expansion or contraction," that it will lie flatter to the dress "and will not catch "it improperly," and that it is not liable to injury from ironing or mangling.

The patentee colours pins, hooks, eyes, buttons, and other fastenings made of metal "by applying coloured enamels or "japans." The articles are shaken in a bag until "the filth "upon the surface" disappears; they are then freed from dust and put into a bowl containing sufficient spirits or oil of turpentine "to moisten them slightly all over." This is intended to cause the enamel or japan mixture ("which is immediately added") to cover the whole surface of the articles. When a thin coat has been produced on each article, the articles are scattered over an iron pan, and the pan with its contents is subjected in a stove for about 15 minutes to a heat of from 210° to 220° Fahr. The process is to be repeated (generally three or four times) omitting the spirits of turpentine unless the articles adhere together; "a few drops may in such case "be added sufficient to loosen them."

The patentee describes the composition of several enamel or japan mixtures, but she does not claim the invention of any of them.

Other inventions claimed are a window or shutter fastener and an ornamental candle fastener.

[Printed, 10*d*. Drawing. *See* Repertory of Arts, vol. 12 (*enlarged series*), p. 175; Patent Journal, vol. 5, p. 154.]

A.D. 1848, March 9.—No. 12,092.

HOBDELL, Henry Bashard.—"Improvements in studs and "buttons." These articles are made with a spring inside so that "the distance between the front and back portions thereof "may be varied."

The stud consists of a hollow metal front, a disc carrying a stem, and a helical spring." The ends of the spring "take "their abutment, the one against the bottom plate of the "front of the stud, and the other against a plate attached to "a rivet head" formed on the stem. When the stud is being inserted, the spring yields, allowing the stud to expand "so "that its front and back may be separated further apart from "each other." The spring may be placed in the back portion of the stud, "the several parts being modified to suit this "arrangement."

In a "stone stud with metal mountings," an additional part is required namely a small cylinder, within which and around the stem the spring works; the cylinder is riveted or otherwise connected to the stone front.

In a wristband stud the spring is of a different shape, "being made out of flat strips of metal such as watch "or clock springs." The top of the stem is riveted to the spring.

Springs of vulcanized rubber may be substituted for the metal springs.

Buttons with shanks (either metallic or flexible) are made on the same principle. If a flat spring is used, the portion of the shank which passes into the button back is riveted to the spring; if the spring is helical, one end abuts against a plate on the top of the shank, the other against the back collet. Springs of vulcanized rubber can be used for buttons as well as for studs; they are especially applicable for flexible shanks.

[Printed, 8*d*. Drawing. *See* Patent Journal, vol. 5, p. 434.]

A.D. 1848, April 12.—No. 12,120.

MASTERS, John.—"Improvements in dress fastenings and "in attaching the same, and in articles made wholly or in "part of certain flexible materials or fabrics." 1. Fastenings for the backs of ladies' dresses :—Hooks and eyes are attached to strips made wholly or partly of caoutchouc or gutta percha; when the strips are secured to the dress, the portion between each hook and eye "forms a spring."

2. Braces are connected at the back by strips (wholly or partly of caoutchouc or gutta percha) forming either a lace or cross straps or loops for a lace. The lower ends may be connected to the upper ones in like manner. Sometimes joints are made in braces by placing one part on another and loosely riveting an eyelet through and on to both.

3. Ladies' braces or chest expanders :—Two lengths of web are united (as in braces) at the parts forming the back. Another length (for a waistband) is buckled or otherwise fastened round the waist. The two lengths are attached at the back end to the waistband by a button or other fastening; each is long enough "to pass over the shoulder and then back "under the arm so as to allow of being attached to the back "of the same brace."

4. Back straps or springs for vests, trousers, &c. :—The end pieces (of the ordinary materials) carry elastic loops which are connected by lacing. Sometimes the end pieces are of vulcanized caoutchouc or gutta percha, and sometimes the whole strap is of such material.

5. Elastic strings for caps, vests, trousers, &c. are made by connecting a short length of caoutchouc or gutta percha webbing to a piece of ribbon, tape, or other fabric.

6. "Springs for trouser bearers" consist of two side pieces of cloth united by a piece of elastic material; or they consist wholly of such fabric.

7. Neck stocks, stiffeners, and opera ties have their foundations made wholly or in part of caoutchouc or gutta percha.

8. Wristbands for shirts have elasticity given them by the insertion of an elastic strip "when in an extended state."

It is preferred that the caoutchouc or gutta percha should in all cases be vulcanized.

[Printed, 4*d*. No Drawings. *See* Repertory of Arts, vol. 13 (*enlarged series*), p. 30; Artizan, vol. 7, p. 82; Patent Journal, vol. 6, p. 60.]

A.D. 1848, August 28.—No. 12,257.

ROWLEY, Charles.—"Improvements in the manufacture of "buttons." The first improvement relates to dies used in making perforated metal buttons:—The dies are combined "for performing in succession the various processes required, "the metal being moved forward, cut off, and gauged between "the succeeding processes." The upper die carries a "cutting "out tool," a tool "for countersinking or marking," a tool "for punching the holes," and a cutter, which "acting with "the edge of the lower die cuts off the piece of metal." The lower die is provided with corresponding beds and a gauge plate. The metal "is pushed forward each time the upper "dies or tools go up, so that the fresh surfaces thereof will "first be punctured, then countersunk or marked, and then "cut out and the projecting metal cut off."

The second consists in "applying the lapidary's art in orna- "menting and giving a more regular and varied character" to buttons of pearl, ivory, bone, or wood, so that each button will be formed with "numerous angular surfaces."

The third relates to the manufacture of "leek buttons:"— Metal shells are used. There is a hole in the centre of each shell "for the passage of a needle in working over the front "thereof." Front shells are covered with silk twist or other material; they are placed in dies; back shells with flexible shanks are pressed into them, and the buttons are then flattened and finished. Heretofore "the leek buttons came at the "back and not in the front.

The fourth consists in making sewn-through buttons with a perforated centre of ivory, bone, pearl, horn, or wood, "to- "gether with a metal disc and woven covering:"—A shell is made from a metal disc by cutting out the middle and raising the edges. When the fabric and the centre are secured in the shell, a button will be produced "having in front the same "appearance as those heretofore made," whilst the back will be of ivory, &c.

The fifth consists in ornamenting buttons covered with velvet:—A disc of metal perforated "according to any device" is placed in dies "similar to flattening or finishing dies." When the button is pressed in the dies, the metal of the disc which is not removed by perforation "coming against the pile "will flatten it on to the face of the button and thus ornament "such face." The bed of the die should be heated in order to set the pattern.

The sixth relates to the construction of tools or dies used for making covered buttons :—The parts are a punch, a bed die, a "collar for filling," a moveable die, and a coiled spring in the bed die. A back metal shell is placed on the bed and over it a disc of shank cloth. The punch forces the middle portion of the cloth through the shell to form a tuft. A piece of button board is then introduced. The collar is then "placed in position" and is "supported by the spring." A disc of fabric for covering the front shell is placed on the moveable die, then a front shell is "placed thereon and pushed into the die" so that the edge of the fabric is raised up round the circumference of the shell. The moveable die "is then turned down on "to the collar," and the punch "will first force down the "sliding piece" of the moveable die, (forcing the front shell out of it "into the bell-mouthed entrance" of the collar) and then the die together with the collar. "The further descent "of the parts will cause the button to be flattened and "finished."

The seventh consists of a new manufacture of metal brace and strap buttons :—A metal shell is pierced with a central hole and is turned up round the edge of the circumference. A piece of wire is laid across the hole, and the turned up edge of the shell is "bent inwards so as to close the same." The shell is then flattened ; the edge forms "an enlarged or thickened "rim" and the wire a shank.

The eighth consists of an apparatus for cutting cloth into circular discs for covers of buttons :—The principal parts of this apparatus (of which the patentee gives a lengthened description) are (1) a main shaft carrying several cams, &c. ; (2) a sliding frame ; (3) a rack fixed to the frame ; (4) a pinion "made of such a size that an entire revolution of the same "shall carry the rack a greater distance than the width of any "cloth intended to be cut in the machine ;" (5) a double ratchet wheel on the same shaft as the pinion ; (6) pawls applied to the ratchet ; (7) a roller hung on pivots bearing in standards on the sliding frame and having the cloth wound round it ; (8) drawing rollers through which the cloth passes under (9) a punch ; (10) a tube "to give a passage to the

" discs when cut out." The arrangement of the parts is such that the discs are cut out " close to each other, but without " intersecting, and with their centres at the angle of or about " 60° in relation to the centres of those nearest them in either " of the adjoining continuous rows."

[Printed, 2s. 6d. Drawings. *See* Mechanics' Magazine, vol. 50, p. 213; Artizan, vol. 7, p. 207; Patent Journal, vol. 6, pp. 227 and 233.]

A.D. 1848, November 4.—No. 12,318.

COOPER, Joseph.—" Improvements in fastenings for wear- " ing apparel." These fastenings are applicable to trousers, trouser straps, stays, riding and walking belts, and as a " substitute for coat links, buttons, buckles, and other old " means."

Three " tabbs or triangular pieces " of cloth or other suitable material are attached to the upper edge or band of trousers, two in front, one behind; they are so " formed and adapted as " to draw the trousers equally from every point of attachment " towards the top." The tabs are rendered elastic by inserting springs between the cloth and the lining; or they may be made of vulcanized rubber webbing bound on the edges with some non-elastic material. To the upper edge of each tab is secured a double piece of leather, to which is fastened " a " metallic plate or connecter, the corresponding part or por- " tion of which is attached to the brace." The corresponding part is usually one of a row of studs riveted to the leather brace ends; but the invention admits of " different forms and " modifications of these plates and connecters," and several are described in the Specification.

When the fastening is applied to trouser straps, one part is secured to the bottom of the trouser legs, the other to each end of the strap. The same plan is adopted for stays and belts.

[Printed, 10d. Drawing. *See* Mechanics' Magazine, vol. 50, p. 440.]

A.D. 1848, November 4.—No. 12,319.

ILES, Charles.—" Improvements in the manufacture of cer- " tain descriptions of dress fastenings, and in the making up " of dress fastenings and other articles for sale." On May 4th, 1849, the patentee disclaimed the words " in the manufac-

" ture of certain descriptions of dress fastenings, and," and his disclaimer was stamped and filed on the above-named day.

Buttons and hooks and eyes are made up for sale by affixing them with gutta percha cement to surfaces of card or other substance :—A plate of metal is laid on a box or surface which is heated by steam. The plate carries two register pins to receive certain perforated plates and other register pins for holding the card on to which the buttons, &c. are cemented. The card is placed on the plate, and on the card a plate perforated with as many holes as there are to be buttons, &c. Into each hole is put a piece of gutta percha, which is forced through the hole on to the card by means of a plate carrying as many projections as there are holes. "The heat communi-" cated to the gutta percha causes it to assume a plastic and " adhesive state." When the plate with projections and the perforated plate are removed, a plate, having holes therein " of the diameter of the buttons to be attached " or shaped to suit the hooks and eyes, is laid on; the holes are filled with buttons or hooks and eyes, and the articles are pressed down on to the cement.

Hooks and eyes are sometimes attached to cardboard by cutting therein "parts, which being folded upwards come be-" tween the parts of the hooks and eyes."

To make up pins and needles for sale, a circular, oval, or other shaped piece of paper, or of stiff woven fabric, or of paper and fabric combined, is used. The front surface is embossed so as "to produce radial grooves" to receive the stems of the pins or needles in front or at the back. A back surface is fixed on with cement. In some cases embossed paper is used " in place of the paper now used ;" the paper is embossed with grooves, one for each pin or needle, whilst "transversely " of the paper" parts are formed in the embossment "for the " heads of the pins to come against and for holding the " stems." The patentee describes an apparatus "for filling " such embossed paper."

"Tape or other narrow weaving" is made up by winding it into a circular or oval roll and "applying cement in such " manner as to retain the neighbouring edges together for a " very short length of the fabric." A narrow strip may be cemented to one side of each roll.

[Printed, 2*s.* 2*d.* Drawings. *See* Mechanics' Magazine, vol. 50, p. 450; Patent Journal, vol. 7, p. 48.]

A.D. 1849, April 3.—No. 12,558.

CARPENTER, Samuel Alfred. — (*A communication.*)— "An improvement in or substitute for buckles." This invention is described as applied to a brace, but "it is applicable "to all the purposes for which a buckle is usually employed"; the several parts are fixed in position "by a wedging action."

A metallic link is attached to the front end of each brace length and another to the top of each brace suspender. A strap of leather is looped through the upper link; its ends are passed through the lower link, and when passed through, the extremity of each has fastened to it a wedge-shaped piece of leather, or it may be a piece of uniform thickness.

To shorten the brace, one end of the strap is pulled upward as far as required and is then allowed to fall; the strap "is "immediately wedged and fastened in its position" by the other end. To lengthen the brace, the end serving as a wedge is pulled downward.

[Printed, 6*d*. Drawing. *See* London Journal (*Newton's*), vol. 35 (*conjoined series*), p. 262; Mechanics' Magazine, vol. 51, p. 335; Patent Journal, vol. 8, p. 58.]

A.D. 1849, April 26.—No. 12,587.

ILES, Charles.—"Improvements in manufacturing picture "frames, inkstands, and other articles in dies or moulds, and "in producing ornamental surfaces." Buttons are included in the numerous articles affected by this invention, the "peculiarity" of which consists in giving to the articles "a "veined or marbled appearance."

Any suitable plastic material is combined with coloured silk waste or other coloured fibrous matters. The waste or other fibres must be dyed of a colour or colours different from that of the plastic material, "in order that those portions of the "coloured fibres which come to the surface may give to the "fabricated article a veined or marbled appearance."

The patentee does not claim any particular plastic material, but he prefers one composed of resin 4 parts (by weight), wax 1 part, glue 6 parts, alum 4 parts, and gypsum 12 parts. He melts the resin and wax, then adds a hot solution of glue, afterwards the alum and gypsum in a state of powder, stirs the ingredients well together, adds colour if required, stirs in a quantity of fibrous matter, and puts the compound into moulds.

[Printed, 4*d*. No Drawings. *See* Repertory of Arts, vol. 15 (*enlarged series*), p. 24; London Journal (*Newton's*), vol. 35 (*conjoined series*), p. 269; Mechanics' Magazine, vol. 51, p. 429; Patent Journal, vol, 8, p. 70.]

A.D. 1849, July 4.—No. 12,696.

BAILEY, Henry.—"Improvements in the construction of "wearing apparel, which improvements are also applicable "to fastenings for the same." The patentee describes :—

1. "A metallic safety pocket" made wholly of metal "woven or otherwise manufactured"; it is fastened by means of a hinged clasp, which is perforated at the outer edges with numerous holes to enable it to be sewn to the dress.

2. Metallic fastenings applicable to "shirts, collars, gloves, "and other similar articles of dress":—These consist of "stamped metal links," "slips or coupling," and a "raised "stud or projecting pin" which passes through a slot in one of the links. The slip is passed "over the two surfaces of "the metal links." These fastenings admit of modifications which are described in the Specification.

3. Fastenings applicable to "clog, trowser, and other "straps":—These consist of "pieces of metal furnished with "studs or projections" which take into corresponding holes or recesses and "form flat and secure fastenings."

4. "A novel form of buckle":—This is made "in one entire "piece, without a separate tongue, adapted or applied to "gaiter or other straps," a point "supplying the place of the "tongue."

5. A "double hook and eye"; the parts "when united are "curved to lie perfectly flat."

6. A "button fastening":—A bent wire is passed through the shank, a hole in the fabric, and a slotted washer placed at the back of the fabric; the ends of the wire are bent back flat on the washer.

7. "An improved button":—The parts are a hollow metal cap pierced with a hole in the middle, a nipple, two circular pieces of linen or other fabric having a hole punched in the centre, and a wire ring "with a bar crossing the diameter." The cap is placed upon the pieces; the nipple is inserted

through the holes, and its upper edge is turned over; the edges of the pieces "are then turned up over the cap," and the ring is "inserted in the hollow." The linen edges and the cap "are then firmly pressed together, forming a complete "button." The ring may be dispensed with, and only the bar be used; metal, bone, or other material may be substituted for the fabric.

[Printed, 10*d*. Drawing. *See* Repertory of Arts, vol, 11 (*enlarged series*), p. 40; London Journal (*Newton's*), vol. 31 (*conjoined series*), p. 350; Patent Journal, vol. 3, p. 575.]

A.D. 1849, October 12.—No. 12,796.

ROWLEY, Charles. — "Improvements in apparatus for "weaving, and in articles to be attached to dresses." These articles are (1) four-hole buttons; (2) shanks for covered buttons; (3) shawl, breast, and other pins; (4) slides for bands and garters; (5) clasps and fastenings made from sheet metal, also the method of attaching the same to dresses.

1. The body of the button is of sheet iron, and the front and edge are covered with a metal shell.

2. The shank is a woven fabric coated with a preparation of caoutchouc; being elastic "it holds the button close upon the "garment when not in use."

3. Shawl and breast pins have a sheath for the point attached to the pin head by means of a tube, chain, and elastic cord. Pins for fastening parts of the dress, &c. are made of one piece of wire, which is bent into two legs; the end of the one is pointed, and the other near the end is turned so as to form a guard for the point. All the pins admit of modifications.

4. These are of steel or an alloy of metals; they are cut out of the sheet "in a circular form having no joining." An opening in the cross bar allows the band "to be passed through "the slide."

5. "The only novelty" in these is that in the apertures for fastening them to the band, &c., the metal is turned down "forming a round and strong edge which prevents its cutting "the web." Some fastenings "upon a smaller scale" are intended as a substitute for hooks and eyes; the holes through which the thread passes have round edges "or what may be "termed ring holes." In attaching these fastenings to tape or other fabric for the backs of dresses, the part through which

the thread passes is formed "into the shank of an eyelet, which " passing through the tape may be closed down in the way " French eyelets are applied, or may have a back collar as " the ordinary eyelet"; when great strength is required, " they may be formed with double eyelets." Some fastenings are made with slots "so that they may be applied to narrow " elastic web."

[Printed, 8*d*. Drawing. *See* Mechanics' Magazine, vol. 52, p. 318; Patent Journal, vol. 9, p. 30.]

A.D. 1849, November 28.—No. 12,865.

NEWEY, James George, and NEWMAN, James.—"Improve- " ments in the manufacture of buttons, studs, and other dress " fastenings and ornaments." The first part of this invention relates to "producing ornamental surfaces" in buttons, studs, &c.; the second to "preparing sheets of metal" for the manufacture of buttons; the third to a method of fastening buttons to garments, "such as the fronts of washing waist- " coats and others where buttons with shanks are used."

1. Substances "with raised projections thereon," such as glass or china, are united to perforated sheet metal by passing the projections through the perforations; "in this manner " may various devices or ornaments be produced." The perforated metal is then ready to be made into buttons, studs, &c., and the front shells will appear "like a series of project- " ing stones set in metal."

2. The sheets are rolled so as to have "greater substances at " intervals, each suitable for forming the centre of the " button." The rollers used are "sunk at proper intervals to " produce the desired substance."

3. A cord is surrounded at intervals with metal tubes; the tubes have a bending-in of the metal in the middle; the bendings-in serve to embrace the cord more tightly and as grooves to receive the shanks of the buttons.

[Printed, 6*d*. Drawing. *See* Repertory of Arts, vol. 16 (*enlarged series*), p. 17; Mechanics' Magazine, vol. 52, p. 438; Patent Journal, vol. 9, p. 114.]

A.D. 1850, February 9.—No. 12,963.

DE SERIONNE, Louis Jean Jacques, Viscount.—"Im- " provements in the manufacture of buttons, and in the " apparatus and machinery used therein." The patentee claims the manufacture of "two principal articles designated under "the name of agathe [agate?] buttons and buttons called straz "[strass?] buttons or knobs." The materials used in their composition are common feldspar, crystallized feldspar, pumice-stone, lava, granite, basalt, sand and freestone, and silex. The base of the agate buttons is common feldspar, that of the strass buttons crystallized feldspar. "Pumicestones, lavas, granites, "basalts, and silex afford the means of obtaining colours at "a lower price than those obtained by the mixture of "metallic oxides with white substances." The feldspar is pulverized, washed, sifted, treated with hydrochloric acid (from 3 to 10 per cent), again washed in acidulated water, dried, and mixed with chloruret of sodium and paste. "Practice alone "will shew the state of materials better than it is possible to "describe it with reference to its dryness or dampness."

In the press used the patentee claims the following advantages:—(1) "multiplicity of the moulds"; (2) "perpetual "motion of the plates bearing the elements of pressure"; (3) "fixity of the plate bearing the piercing instruments or "those forming the cavities"; (4) "the raising of the buttons "pierced and struck and their separation from the pointed "instruments" by means of an intermediate plate, the buttons remaining "in the cavities of the said plate covered with the "superior matrices and separated from the inferior ones; (5) "simultaneous extraction of the buttons from the cavities by "the superior matrices"; (6) a loading plate "spreading "uniformly in the cavities the quantities of substance neces-"sary to the fabrication of each button"; (7) the introduction between the intermediate plate and the inferior plate "of an "iron frame supplied with a sheet of paper destined not only "to receive and arrange in order the buttons so struck, but to "transport them in the same state on an infusible earthen "plate red hot, without the hand being employed in that "process"; the paper burning on the plate "leaves the "buttons on the said plate."

The buttons are now ready for baking, and the patentee describes "an oven of a special form" which he has constructed for such purpose.

When the baking is finished, those buttons, which require shanking, have metal shanks fixed in them "by means of a "vitrifiable substance" having as a basis that of the button itself but fusible at a degree of heat which will not injure the shank. Three such substances are mentioned.

The final processes are colouring, gilding, or enamelling, and the patentee claims the composition of a "transparent "enamel used as a basis for all colours:"—He melts together feldspar crystallized and in powder and free from iron 300 parts; minium (very pure) 400 parts; crystallized nitre 200 parts; calcinated borax 100 parts; when melted he lets the mass "flow in water" and pulverizes it.

Each part of the invention is explained at length in the Specification.

[Printed, 2*s.* 6*d.* Drawings. *See* Mechanics' Magazine, vol. 53, p. 156; Patent Journal, vol. 9, p. 258.]

A.D. 1850, March 23.—No. 13,021.

NEWTON, Alfred Vincent.—(*A communication.*)—"Im-"provements in the preparation of materials for the production "of a composition or compositions applicable to the manu-"facture of buttons, knife and razor handles, inkstands, door "knobs, and other articles where hardness, strength, and "durability are required."

[No Specification enrolled.]

A.D. 1850, June 12.—No. 13,129.

HARDING, Gustavus Palmer. — "Improvements in the "manufacture of buttons and other fastenings." The form of the button and the manner of making it may be varied. The shank or substitute for the shank "consists of a coiled "wire fixed to the button at the back and in the centre "thereof."

In order to attach such a button to a garment, a small hole (it may be a worked eyelet-hole or a hole bound round with metal) is made for the passage of the point of the wire. The button will be securely held "by turning the button round "till the whole coil has passed through the hole."

Hooks and brooches may be made upon a like principle.

Buttons with shanks may be attached to garments by means of a wire bent into the form shown in the annexed sheet of drawings.

[Printed, 6*d.* Drawing. *See* Repertory of Arts, vol. 17 (*enlarged series*), p. 50; London Journal (*Newton's*), vol. 38 (*conjoined series*), p. 8; Mechanics' Magazine, vol. 53, p. 499; Patent Journal, vol. 10, p. 127.]

A.D. 1850, October 17.—No. 13,291.

WILLIAMS, James Henry.—"Improvements in the manu-"facture of buttons." 1. Attaching metallic shanks to buttons of horn, bone, wood, or other like material :—The blank is stamped out with a hole in the middle for the reception of the shank. The hole "is provided with a shoulder near the back "of the button, against which the shank bears." The shank "is secured by pressure."

2. A flexible shank may be applied to these buttons; it is made with a rim and is pressed into the hole, the rim bearing against the shoulder.

3. In some buttons the horn or other material is "prepared "in the form of a ring"; it is placed in a die with a metallic shank inside the ring; the material of the ring "is flattened "and spread upon the ends of the shank" by pressure.

4. Sewn-through buttons :—Some are made of cast metal; the shank (of metal) "is laid upon the sand mould and united "by the process of casting to the body." Some consist of "a thin wire ring in combination with a metal shell" and a covering which has "the twilled face and appearance of the "fabric commonly known as lasting." Some have "a trans-"verse diametrical bar formed in one piece with the ring." Some consist of "metal wire centres" attached to "metal "discs" without the aid of solder; slots are cut in the discs, and the ends of the centres being passed through the slots are secured by pressure; this method admits of modifications which are described in the Specification.

5. Covered buttons with flexible shanks :—The improvement consists "in using a flexible shank in combination with a "narrow detached eyelet or collet through which it is passed."

6. "Self-attaching buttons":—A metal stem, "the end of "it being headed," is soldered or riveted to the button; a ring of india-rubber "to keep the button in its place" is put round the stem; the stem is passed through the fabric; and a metallic disc, "slightly bent, having a hole in the centre, and "slit from the hole to the circumference," is passed over the head and secured under it by closing the slit and flattening the disc. Or the shank may be a wire staple, the ends of which pass through slots in the back shell.

7. Removable buttons :—In one kind the shank is formed of two pieces of metal with a bar between them and moving on a pin; the bar (when in the same line as the pieces) is passed through the fabric and is then turned at right angles to them. In another kind the shank is an elastic cord whereto is attached "a looped bent wire"; the wire is passed lengthwise through the fabric and is then turned.

8. Ornamenting the surface of metallic buttons :—The surface of the button is cleansed and burnished; a design is cut upon a wooden block or cylinder; solutions of sulphate of copper and tin, the proportions varying according to the colour desired, are mixed together and applied to the design; an impression is taken upon the surface by pressure, and a coating of light varnish or a solution of verdigris completes the ornamentation.

9. "A mode of making white zinc buttons :"—The metal "should be recently rolled and before the surface of it has "become oxidized." The surface is to be thoroughly scraped and cleansed, dipped into a very weak solution of muriate of tin, and well washed in clean water. The metal is then passed between bright flattening rollers; blanks are cut out from the sheet, and these being dipped in the above solution are ready for burnishing, &c. Sometimes the zinc is dipped into "bright dripping aquafortis and water" (about 1 part of the former to 3 of the latter), then into "a solution of corrosive "sublimate," and then into "a strong ammonia."

[Printed, 6*d*. Drawing. *See* Mechanics' Magazine, vol. 54, p. 338; Patent Journal, vol. 11, p. 48.]

A.D. 1850, November 30.—No. 13,371.

ROWLEY, CHARLES.—"Improvements in the manufacture "of dress pins and other dress fastenings and ornaments." This invention comprises,—

1. Modes of protecting the points of brooch pins and other pins :—(1) The sheath or clip is "a narrow strip of hardened "metal, the parts clipping the pin being hollowed out for "that purpose," or a piece of drawn wire "with a hollow or "groove on one side." (2) The sheath is a tube "which "may be slid out." (3) The sheath may be connected to a piece, which slides "along the back of the brooch" and is

moved by means of a stud. Other modes are shown in the annexed sheet of drawings, and some of them are described in the Specification.

2. Putting together the parts of "Maltese buttons" and buttons formed of a top shell and back plate :—The shank is of folded wire, "of a half round shape, the two planes coming "together forming a round." A raised cap covers the head of the shank and is closed in round the neck. The stem of the shank is passed through the shell and the plate, and these are held together by the head on one side and the opened out bend of the wire on the other side.

3. The perforated ornamental blanks of these buttons are formed "by punching them out by a series of dies combined "and used together," as described in Letters Patent which were granted to Mr. Rowley, bearing date August 28th, 1848, No. 12,257.

4. Attaching buttons to waistcoats ;—This is effected either by means of "a wire loop" connected to each shank or by "a small circular bolt working between two circular metal "plates, a part of which plates is cut away to receive the "shank."

5. Shirt studs and methods of attaching them to shirts and other garments :—Some are made "with a hollow neck" at the back, and with "a spring wire loop" which fits into the neck; others "with a spring snap made from metal plate;" the snap "clips the stud by the neck of the shank." The spring may be applied "to the front instead of the back "part of the stud." Others consist of a disc carrying a shank; the shank is passed through to the front of the shirt, and an arrow or other ornamental fastening is put through the eye of the shank. The last mentioned is suitable for fastening ladies' dresses, being readily unfastened by securing the arrows or pins to a tape and pulling the top end of the tape.

6. Attaching pins to metal brooches without solder :—A hole is pierced through the top of the brooch; the top end of the pin is hooked and passed through the hole; this admits of modifications which are described in the Specification.

[Printed, 10*d*. Drawing. *See* Mechanics' Magazine, vol. 54, p. 458; Patent Journal, vol. 11, p. 171.]

A.D. 1850, December 19.—No. 13,415.

TAYLOR, John George.—"Improvements in the manufacture "of dress and other pins, and other dress fastenings and "ornaments." Dress pins are made from a piece of wire by bending it into two limbs. One limb is straight and pointed at the end; the other (and shorter) limb is bent at the end into a fork so as to catch on to the straight limb and prevent it from accidentally coming out of the garment to which it is fastened. The shorter limb may be made "more rounding" so that an ornament may be suspended from it. This pin may be shaped to form an ear-ring.

Another dress pin consists of a stem and head. The upper portion of the stem (usually that near the head) is made with a screw or worm forming part of the stem or fixed on to it. The screw portion is turned into the fabric and holds the pin therein securely. This screwed stem may be applied to a brooch.

Sheaths for pin-joints are made of gutta percha or of metal lined with gutta percha.

Stud or button fasteners consist of a coiled wire secured to the back of the article. The free end of the coil is pointed, and the coil will penetrate a dress, shirt, &c. without having an eyelet or worked hole made for its entrance.

A bracelet fastener consists of a piece of wire shaped somewhat like a heart and having its ends turned either inwards or outwards. The ends of the bracelet are passed through between the ends.

A fastener for parts of dresses, to be used with a flexible loop or eye or with a button hole, is shaped like a dress hook with a head forming the head of a T, thereby rendering the fastening less liable "to come undone without the act of the party." Two larger hooks shaped somewhat similarly may be used as a fastener for straps, belts, &c.

The patentee describes also "a fastener for suspending a "hat."

[Printed, 6*d*. Drawing. *See* Mechanics' Magazine, vol. 54, p. 517; Practical Mechanics' Journal, vol. 4, p. 85; Patent Journal, vol. 11, p. 171.]

A.D. 1851, January 31.—No. 13,483.

BRADSHAW, George.—"Improvements in fastenings for "garments." These fastenings are intended as substitutes for

" strings or other of the ordinary modes hitherto practised of " adjusting or fastening garments"; they can be applied to shirt collars, to shirt fronts "for the purpose of attaching the " same to the band of the drawers or trousers," to stocks and neckties, to gloves, to wristbands, to garters, to drawers, to braces, and to walking or riding belts.

The fastening consists of a band of strands of vulcanized caoutchouc "covered with a filamentous material" and having attached to each end a piece of silk, cotton, linen, or leather; this piece prevents the end from fraying and serves as a stay whereon to fix a button or stud or a hook. The article to which the fastening is to be applied is made with button holes (one or more) on each side and with "a slit or transverse hole of the " width of the elastic" on one side.

One button is passed through a button hole on one side; the band is passed through the slit on the other side, and the other button through one of the button holes on the same side as the slit.

[Printed, 6*d*. Drawing. *See* Mechanics' Magazine, vol. 55, p. 134; Patent Journal, vol. 11, p. 254.]

A.D. 1851, February 1.—No. 13,487.

ALLEN, SAMUEL, junior. — "Improvements in the manufac- " ture of buttons." This invention relates to an improved construction of (1) sewn-through buttons, (2) Florentine or covered buttons.

1. A metal disc is pierced through the centre and then raised into the shape of a cupped ring. The covering material consists of two discs (a coarse fabric for the lining and a finer one for the outer cover); they are used "in the subsequent pro- " cesses as one disc." The cupped ring is placed upon the covering disc, and "the edge of the said covering material is " gathered in." Another metal disc also pierced through the centre so as to form a ring is placed on the cupped ring, "the " gathered edge of the disc of covering material being under- " neath the said ring;" the neck of the cupped ring passes through the opening in the ring and is then "spread out or " rivetted."

2. The construction "is carried out in the manner of the " first part," except that a metal disc "is placed immediately " behind the fabric used for covering the button, for the pur

" pose of preserving the front of the button flat," and between the said disc and the cupped ring there is introduced "a disc " of shank cloth which has been forced into the neck of the " cupped ring."

[Printed, 6*d*. Drawing. *See* London Journal, (*Newton's*), vol. 41 (*conjoined series*), p. 182; Mechanics' Magazine, vol. 55, p. 135; Patent Journal vol. 11, p. 234.]

A.D. 1851, March 4.—No. 13,542.

NEWTON, Alfred Vincent. — (*A communication from C. Goodyear.*)—"Improvements in the preparation of ma" terials for the productions of a composition or compositions " applicable to the manufacture of buttons, knife and razor " handles, inkstands, door knobs, and other articles where " hardness, strength, and durability are required." This composition possesses "some of the characteristics of horn, " ivory, and jet" and is intended to "be employed in place " thereof." It is made of caoutchouc or gutta percha and sulphur, "of magnesia or lime, or of carbonate or sulphate of " magnesia, or carbonate or sulphate of lime, or calcined " French chalk, or other magnesian earth," and there may be combined therewith advantageously gum lac or gum shellac, as well as small quantities of "resin, oxides or salts of lead or " zinc of all colours, and other similar substances both mineral " and vegetable."

If caoutchouc and sulphur alone are used, the best proportion will be "about equal parts by weight of each ingredient."

The proportions of another compound are 1 lb. of caoutchouc, ½ lb. of sulphur, and ½ lb. of magnesia or other magnesian earth; the proportions may be varied, but in no case should there be less than 4 oz. of sulphur to every lb. of caoutchouc.

If gutta percha is used instead of caoutchouc, the proportions preferred are 1 lb. of gutta percha, 6 oz. of sulphur, and from 6 to 8 oz. of magnesia or other magnesian earth; if gum shellac is added, the quantity should be about 4 oz. to every lb. of gutta percha.

The ingredients are to be thoroughly incorporated (mineral ingredients when used should be reduced to an impalpable powder), then rolled into sheets or moulded into shape, and afterwards cured by exposure to heat ranging from 250° to 300° Fahr.; the time required for curing varies from 2 to 6 hours.

The compounds may when hardened be worked like bone or wood. Or they may be hardened into any desired shape "by "the use of sand, pulverized soapstone, or some similar "granular matter, to sustain and keep the compounds during "the process of heating to the shape into which they were "previously moulded." Iron or other metals may be coated with the compounds.

[Printed, 4*d*. No Drawings. *See* London Journal (*Newton's*), vol. 40 (*conjoined series*), p. 9; Mechanics' Magazine, vol. 55, p. 219; Patent Journal, vol. 11, p. 276.]

A.D. 1851, April 29.—No. 13,609.

GOODE, Benjamin William, BOLAND, Richard, and NEWMAN, James.—"Improvements in chains, chain pins, "swivels, brooches, and other fastenings for wearing apparel."

1. Chains are made by "raising pieces of sheet metal into "such forms that when soldered or brazed they shall form "links of chains."

2. Chain pins:—A chain, carrying at one end a cap and at the other end an ornamental drop, slides freely through an eye fixed on the pin. A hook, attached to the drop takes into a part of the chain "intermediate of the two ends thereof," when the cap is put on the pin point.

3. Five modifications of swivels are described:—One has "part of the ring on a sliding bolt moved by a spring." In a second, a sliding bolt actuated by a spring locks the portion of the ring which opens. In a third, one part of the ring "moves laterally on an axis" and is fastened at the top by a screw or a spring slide. In a fourth, the ring is made in two parts, "one part moving away by means of a stem, which is "constantly pressed on by a spring with a tendency to close "the parts of the ring." This swivel is intended "to suspend "a watch from;" it has a pin at the back to fasten it to the dress. In a fifth, one part of the ring slides back into the other part, "a spring constantly tending to close the part "which moves back."

4. Brooches:—The novelty consists in the modes "of "applying a cap shield to the point of the pin." The cap is fixed to a spring stem, which slides in a tube and is turned up at its other end so as to pass through and catch in a hole

in the tube when the cap is over the point of the pin. Or a tube turns in a ring at the back of the brooch; it is slotted for the pin point to pass through when it is turned outwards, and then holds the point by being turned partly round. Or one tube slides in another; the inner tube being pushed up covers the pin point and is then held within the outer one bayonet fashion.

5. Substitute for "cords, chains, or loops" in connecting parts of dress :—Two ornamental buttons are connected to an elastic band; a pin jointed to the back of one button is secured with a cap on the back of the other. Or each button may carry its own pin.

6. Mode of connecting the two ends of a bracelet :—One end carries a hook, the other an eye; when they are united, a spring slide covers both.

7. "Constructing and fixing the shanks of buttons :"—The shank is a bar with two projections at each end. A perforated disc is made with recesses for receiving two of the projections, and the shank is secured by turning down the other projections into other recesses on the under side of the disc. Or the central part of the disc is sunk to form a flange, and the projections receive the flange between them. Other modifications are described in the Specification.

[Printed, 10*d*. Drawings. *See* Mechanics' Magazine, vol. 55, p. 378; Patent Journal, vol. 12, p. 74.]

A.D. 1851, May 27.—No. 13,640.

EMPSON, John Fielding.—"Improvements in the manufacture of buttons." This invention relates to sewn-through buttons, and the improvements consist in strengthening and ornamenting them by the application of "thread or yarn of " silk, cotton, or other material or materials, in like manner " to what has heretofore been practised when making wire " buttons and leek buttons."

No claim is made for colour of yarn, ornament, or shape of button.

Printed, 6*d*. Drawing. *See* Repertory of Arts, vol. 19 (*enlarged series*), p. 36; London Journal (*Newton's*), vol. 41 (*conjoined series*), p. 183; Mechanics' Magazine, vol. 55, p. 454; Patent Journal, vol. 12, p. 109.]

A.D. 1851, July 3.—No. 13,679.

ASTON, John.—(*A communication.*)—"Improvements in "buttons and ornaments for dress, and the machinery for "making the same respectively." The first part of this specification describes a machine (and its action) for cutting from solid wood "the moulds of which the interior of the "buttons or ornaments are to be made." The machine is "a kind of lathe;" it has two spindles working in a sliding frame, "which is moved backwards and forwards on the "tongued bed of the lathe" by means of a link. The link is worked by a cam driven by an axle "which receives motion "from the main shafts." The piece of wood is introduced between two wheels and a plate; it is held fast in its place by springs and a catch frame; it is "operated upon at regular "intervals" by a cam which is connected to an eccentric fixed on the before-mentioned axle. A spring presses back the catch frame "into the several notches" of the last-named cam, allowing the wood "to pass downwards, which it does "at such intervals as allow for the cutting or turning out of "the back and front of each mould." The spindles have affixed to them chucks into which the cutters are fitted. When the sliding frame is set in motion, it brings into action, first the spindle with its chuck and the cutting tool "which turns "the back face" of the mould, and then the other which "turns the front face," thus completing one half of the mould ("when the button consists of two pieces"); the other half is produced "with tools of a suitable pattern by means precisely "similar." The machine (with its action) is described at length in the Specification.

The second part contains a full description of "a pair of "presses, such as are used for the purpose of combining the "moulds and various parts into a button:"—Each press is worked by a treadle, which acts on a weighted "sliding bolt, "forming in fact the press." One consists of a punch carrying "the top mould" of the button, and a die, on the top of which is placed the fabric "to form the top cover of the "button." In the other press a hollow punch is fixed in the sliding bolt; it is surrounded by a spring, and inside it is a moveable pin "flattened at the point" and "regulated by a "set screw." Another pin works up and down in the die of this press. A cover for the bottom of the button, pierced with a hole in the centre, is placed on the pin; the bottom mould is then put on the pin; a piece of silk or cotton cord is laid "over the centre hole of the mould," and the punch forces down the materials into the die, the pin in the punch "pressing "the cord to form the shank through the hole in the centre "of the mould." The die charged with the top mould and top cover is taken from the first press, is placed "face down-"wards" on the die of the second press, and the punch again descending "presses the upper and lower parts together." There is a spring round the die of the second press "twice "the strength of that round the punch." The button may be made without the cord shank so as to be sewn through.

Ornaments for dress may be made with a shank or loop upon the same principle as buttons.

[Printed, 1*s.* 4*d.* Drawings. *See* Repertory of Arts, vol. 19 (*enlarged series*), p. 153; Mechanics' Magazine, vol. 56, p. 39.]

A.D. 1851, November 4.—No. 13,799.

KOSMANN, THEODORE.—"Improvements in brooches and "other dress fastenings." This invention relates to "modes "of securing dress ornaments and other loose articles carried "about the person, such as watches, purses, and like other "articles."

The invention is described more especially with reference to dress pins, 15 out of 20 figures in the annexed sheet of drawings being figures of pins. The first is a pin having a serpent for its head; from the serpent's mouth proceeds a strip of india-rubber carrying a hook fixed to a fish; when the pin is passed into the dress, "the fish is hooked on the same part "of the dress at the distance limited by the length of the "india-rubber spring." In nearly all the others a chain is connected to the head; it carries a ring and hook, or only a hook or an ornament serving as a hook, by aid of which the pin is secured. In one figure a hook is fastened to the head; "the pin is first thrust in the stuff, then brought back in the "contrary direction till the hook enters the dress." In another the hook is "in the shape of a boot hook;" it is fastened to a ring which is attached to the head. "When "the pin has passed a fold of the garment not so long as

A.D. 1852, January 12.—No. 13,894.

DUTHOIT, Alcide Marcellin.—"An improved chemical "combination of certain agents for obtaining a new plastic "product." This combination consists of purified and bleached gutta percha, common or purified or coloured oxide of zinc, or amianthus, or fusible spar, or other analogous substances, and mineral or vegetable colours.

Three compositions are mentioned, from one of which (as practice points out to be the most suitable) the patentee makes a great variety of articles, "buttons of every form, size, and "colour" included.

The first composition is made from 1 part of gutta percha and 1 part (by weight) of common or purified oxide of zinc; the second from 1 part of gutta percha and a like quantity of fusible spar; the third from 1 part of gutta percha and an equal quantity of amianthus either in fine powder or in decoction. The quantity of oxide of zinc, spar, and amianthus however vary "according to the quality and intended "application of the mastic."

The gutta percha is dissolved, purified, and bleached by means of rectified essence of coal oil, or sulphuret of carbon, or other suitable solvent, at a heat of from 25° to 30° centigrade. When dissolved it is filtered, and "the liquid, which "has become limpid and of the consistence of syrup," is put into a still together with the zinc, spar, or amianthus, and colour in a state of impalpable powder.

[Printed, 4*d*. No Drawings. *See* Mechanics' Magazine, vol. 57, p. 59.]

A.D. 1852, January 27.—No. 13,923.

BRINDLEY, William.—"Improvements in the manufacture "of flocked fabrics, and in the manufacture of buttons." Paper and other fabrics are waterproofed in the manner described in the Specification of Letters Patent which were granted to Mr. Brindley on February 28th, 1849, No. 12,494. Flock is then applied to the surface "with adhesive material "as is usual in the manufacture of ordinary flocked paper."

Flocked paper is japanned "in like manner to what is "adopted in japanning leather," and is then applied "to the "covering of what are known in the trade as die and pressure-"made covered buttons."

Woven fabric, flocked on both sides and "done in pattern, "and as it may be in different colours," is very ornamental for "waistcoatings and for other articles of dress."

[Printed, 4*d*. No Drawings. *See* Repertory of Arts, vol. 20 (*enlarged series*), p. 185; London Journal, (*Newton's*), vol. 41 (*conjoined series*), p. 110; Mechanics' Magazine, vol. 57, p. 117.]

A.D. 1852, June 12.—No. 14,169.

COOPER, George Pate.—"Improvements in fastenings for "garments."

[No Specification enrolled.]

A.D. 1852, August 26.—No. 14,277.

TWIGG, George.—"Improvements in the manufacture of "buttons and other dress fastenings, and in the machinery and "apporatus to be used therein." 1. Buttons :—Some consist of an upper and a lower shell and a cross piece. The shells are perforated in the middle; the edge of the hole in the upper shell is turned down; in the lower shell the edge of the hole forms a flange for the cross piece to rest on; and when the shells are put together, the central edge of the upper holds fast the cross piece.

Some are made on the same principle "from one thickness "of metal, or what are commonly known as single shell "buttons."

In some the centre is a metal plate with holes drilled through it; this plate "fits into a recess in the shell," and "is then "grooved by suitable tools" into its place.

"Stud buttons" are composed of an upper and a lower shell, a shank, and two washers. The lower shell is perforated to admit the shank, which is a headed piece of wire. The head rests inside the lower shell; when the shells and shank are put together and flattened, a "distance washer" is "slid "on to the shank." When the fabric to which the button is to be attached is "passed on to the shank," the other washer is put on, and the whole is riveted together. This button may consist of a single shell with a shank brazed on to it. Or the shank head may be fitted into a recess in the shell; it may also be "shouldered down smaller at the bottom, forming a collar" for the fabric to bear against.

Others consist of a ball of wood or other material netted over with silk or other covering, drilled for the passage of a shank, and countersunk at the top for the reception of an ornament on the shank head. When the shank is inserted, a washer is put on the tail of the shank, and the extremity is opened out.

2. The holes in buttons are smoothed and countersunk "all at one and the same time" by means of suitably shaped drills which "are fixed horizontally and are all caused to "revolve at the same time."

3. Clasps:—Two slots are cut in one of the two parts, and in the other there is formed a nib or tongue, "the width of "the nib at the end corresponding with the length of the slot, "but smaller in the head or neck" to admit of its being turned in the slot. In fastening this clasp the part carrying the nib "is turned at right angles" to the other, and when the nib is passed into one of the slots and the part is turned back into a line with the other, "it is prevented from working "out by the width of the nib." A modification of this "clasp, the same in principle," is described in the Specification.

4. Machinery "for edging blanks and grooving in the centres" of buttons:—A rack slides in a groove in the top plate of the frame. Two wheels are geared into the rack; they are hung on shafts mounted on bearings which are screwed to the top plate. On the same shafts are fixed two wheels gearing into each other; they "give a contrary direction to the shafts in "revolving." Steeled plates are screwed to the sides of the rack, and similar plates to the top plate, "the distance being "regulated according to the size of the button to be edged "or grooved;" they are grooved "to round the edge and "support the button whilst being operated on." Two circular plates fixed on the shafts are formed each with "a snug" which acts on an upright arm attached to a lever; this arrangement is for the purpose of working slides "that feed "the machine with blanks." The blanks are put into hoppers which are fixed into boxes secured to the top plate. The ends of the levers act on studs fixed to slides or feeders which "work in the boxes." Springs "push forward the slides" and "pass a blank against the grooved sides of the steeled plates." The blank is rolled between the grooves "until it has passed

" the end " of a stationary plate, when it drops through an aperture. The action of the machine is fully explained in the Specification.

[Printed, 1*s.* Drawings. *See* Mechanics' Magazine, vol. 58, p. 215.]

PATENT LAW AMENDMENT ACT, 1852.

1852.

A.D. 1852, October 1.—No. 128.

ROGERS, William.—" Improvements in studs, buttons, and " other fasteners." The head of these articles has attached to it a hollow stem. Inside the stem is a spring, which presses down a wedge-shaped piece on to the shorter ends of two arms and has a constant tendency to force the other ends of the arms " to stand off from the stem, and at or as nearly as may " be right angles thereto." There may (or not) be a groove in the face of one arm and a projection on the face of the other, which hold the arms together and facilitate their passage through the hole of a garment.

There may be a slide on the stem which keeps the arms from expanding until they are passed through the hole. A spring may force the slide down the stem.

Dress pins may have a like arrangement attached to them immediately beneath the head. The shanks of buttons may be similarly furnished at their outer end.

[Printed, 6*d.* Drawing.]

A.D. 1852, October 2.—No. 170.

ALLPORT, Edward.—" An improvement in the manufacture " of buttons by making them with elastic shanks." This shank, made by preference of " elastic twist webb," allows the button " greater play," thereby " reducing the strain and rendering the button less liable to be torn from the garment ; " it is applicable to Florentine or covered buttons, double shell sewn-through buttons, and covered back buttons.

In Florentine buttons, it is introduced "in the same manner "as the canvass is now applied." In sewn-through buttons it is placed between two perforated shells, and the three are firmly pressed together. In covered back buttons, the back shell is perforated, and a flange is turned up round the aperture. The material to cover the back shell is perforated in like manner, and a portion of it "is then turned back and drawn through the "shell slightly beyond the flange." A ring or eyelet is placed over the flange inside, clipping the material, and the edges are secured by being pressed together. The button is then put together, "the elastic twist webb being introduced to produce "the elastic tuft shank by the ordinary mode of forming tuft "shanks."

[Printed, 4*d*. No Drawings.]

A.D. 1852, October 6.—No. 274.

CHATWIN, John Frederick. — "Improvements in the "manufacture of buttons." The first part of this invention relates to the manufacture of "cylindrical or barrel-formed "buttons," the second to the introduction of "woven fabrics "having each a wire or wires therein as warp or weft, or both" into sewn-through buttons.

1. The shape of the various dies used in this part is shown in the annexed sheet of drawings. A blank of metal "such as "is used in making barrel-shaped buttons," is bent into shape in one set of dies and is covered with fabric in another set. The shank and button board (pressed into form in suitable dies) are combined with the covered blank in a third set, and the partly formed button is then "ready to receive its ends;" these are either covered circular discs or glass or ornamental ends. The ends are put "into their respective tools;" the barrel-shaped part "is then introduced into the lower tool "or die;" the parts are pressed together, and the button is afterwards finished in another set.

2. Wires, covered by preference with linen or cotton, are introduced at intervals both as warp and weft; thus they cross each other, "and their intersections form the centres of the "several discs" cut from the woven fabric. These wires "will aid in giving strength to the sewing of the buttons on "to garments."

[Printed, 8*d*. Drawing.]

A.D. 1852, October 8.—No. 304.

PATERSON, John.—(*A communication.*)—"Improvements "in buckles or fastenings." This article consists of a metal frame, the sides of which are slotted for the sliding up and down of a bar therein. Or the ends of the bar may be slotted so that the bar may slide up and down on the sides.

When the article is used as a brace buckle, the front end of each brace-length is permanently attached to the top of the frame. The free end of the brace-tab "is introduced from "the back of the buckle between the sliding bar and the top "of the frame and is then brought over the sliding bar and "passed between it and the lower part of the frame." The stronger the strain the tighter will be the hold.

Some are made with a fixed bar inside the frame in addition to the moveable bar; in this case the end of the brace-length is fixed to the stationary bar.

For waistbands and belts the sliding bar "moves to and "fro in two caps," which are riveted to the back of the frame.

[Printed, 6*d*. Drawing.]

A.D. 1852, October 15.—No. 405.

HEWSON, Allan Edwin.—"Improved modes or processes "for making buttons, beads, and other ornaments of dress." The patentee makes a composition of sawdust and glue, or of sand and resin, and forms small pieces thereof into the shape and size required for the body of the buttons, beads, &c. either by hand or by "squeezing into suitable moulds." He allows the bodies to dry and contract and then coats them with common paper pulp. When the coating is dry, he presses the articles in dies, thereby shaping them and forcing out the surplus material; he then steeps them in linseed oil, submits them to heat, makes them smooth and uniform by means of a fly-press and suitable tools, japans them, and finishes them "in the usual way." The shank of a button "should be "applied at the close of the second process; or before the "button is being squeezed into form at the fly-press."

[Printed, 6*d*. Drawing.]

A.D. 1852, November 16.—No. 765.

JOHNSON, JOSEPH. — "An improved mode of producing " ornamental articles, such as brooches, bracelets, dressing " and other cases, work and other boxes, or other like articles, " from a certain kind of wood." The wood is "Irish bog oak" and other "descriptions of wood which are found in bogs." The wood is dried and cut as nearly as may be to the form of the article or part of the article to be made; it is then subjected to pressure in metal dies engraved with designs and heated to from 270° to 300° Fahr. Hydraulic or other pressure is employed "according to the dimensions of the " articles and according to the extent of embossing to be " obtained."

[Printed, *4d.* No Drawings.]

A.D. 1852, November 23.—No. 833.

FREARSON, JOHN.—"Improvements in the manufacture of " hooks for garments." These hooks are made from a piece of wire or metal by aid of machinery of which the following are the chief parts :—(1) a main shaft carrying several cams; (2) "closing levers" mounted on pivots which are secured to the bed of the machine; (3) "closing slides" carrying (4) " tool holders "on one side of which are inclined projections that act against inclined projections on the slides; (5) "closing tools" carried by the holders; (6) mandrels or pegs round which the eyes of the hooks are bent; (7) a horizontal lever mounted on a bracket and carrying at one end (8) a "beaking plate lever;" (9) a "pinching lever" having pin-jointed to one of its ends (10) a "pressing " or planishing lever;" (11) a lever pin-jointed at one end by means of links to the planishing lever; (12) an "instrument " which bends the point of the hook at right angles" and is carried by a slide; (13) springs by which "the moveable parts " are kept to their cams."

When the main shaft is set in motion, two cams move the closing tools towards each other, and the projections on the holders slide along the other projections. The tools " tuck the ends of the wire in towards the body of the blank;" advancing still farther, the projections come into contact and cause the tools "to move sideways." The mandrels "being

" stationary during this process," the ends of the wire " become tucked up." Another cam causes the beaking plate lever to press on the blank, and another cam causes the instrument "to bend the beak part of the hook at right angles." The instrument retreats, and another cam causes the planishing lever to advance towards the instrument, whilst another cam causes the the same lever "to ascend," thus "completing " the hook." The same lever " moves back the needle hole ;" the mandrels "draw out in the ordinary way," and the beaking plate lever "liberates the finished hook."

[Printed, 8*d*. Drawing.]

A.D. 1852, December 8.—No. 994.

JENKINS, HENRY.—"Improvements in the manufacture of " bracelets, brooches, and other articles of jewellery." Bracelets, brooches, buckles, shawl pins, and other articles of various forms and patterns are produced without soldering the parts together. The parts are united by means of "pins " with beads or heads riveted or screwed on the ends thereof."

The invention is described in the manufacture of a bracelet. Each part to form a front or mount is stamped out of a sheet of gold or other plate, and small holes are pierced through the sides, and "when required a large perforation through " each side." A blank to form the back is stamped out or pressed into shape, and " one, two, or more channels or inden-" tations (as may be desired) are formed across the back." The extreme ends of the blank are turned over "until the " open parts of the said channels or indentations are covered " by the ends so turned down" and " form loops or tubes." The mounts and backs (combined with a gem or other ornament) are united "by passing pins of wire through " the small holes" in the sides of the mount and through the " loops formed in the back" or "over and along the channels." Ornamental heads or beads are fastened on the ends of the pins. The bracelet is composed of several of these pieces united by passing "through each of the larger perforations " made in the sides of the mount" an elastic band, the ends of which are sewn together or otherwise fastened; or elastic cords (instead of pins) may be passed "through the smaller " perforations made in the sides of the mount and through "the loops, channels or indentations in the back." A bead (or beads) is placed on the cords between each ornamental part.

The mounts and backs may be made with ears or projections or with clips instead of with holes.

[Printed, 6*d*. Drawing.]

1853.

A.D. 1853, January 8.—No. 60.

WALKER, RICHARD.—"An improvement in the manufacture "of buttons." This invention relates especially to "shell or "covered buttons"; it consists of an inexpensive cement intended as a substitute for the button board, now used as a filling material. The cement is composed of any material capable of being pulverized or ground, such as "common "sand, iron filings, or wood sawdust" mixed with glue, resin, "shellac, or other glutinous or resinous material" which will melt at a low temperature.

Cavities are sunk in a metallic plate; front shells are placed therein; "and the manner of applying and regulating the "quantity of such material required in each button shell is "identically the same commonly known and used by per- "cussion cap manufacturers for charging percussion caps." When the shells are filled, the plate with its charge is put into a stove sufficiently heated to melt the glue or resin; when the cement is melted and the shells are cool, "the shells are in "a fit state to be finished in the usual way."

[Printed, 4*d*. No Drawings.]

A.D. 1853, January 22.—No. 162.

QUINTON, BENJAMIN.—"A new or improved fastening for "brooches and other articles of jewellery and dress." This invention is described in its application to brooches and dress pins.

In a brooch a threaded plate is fixed to the head and a perforated plate to the bottom at the back of the setting. The pin is made with a plain or ornamented head and a screw immediately below the head. The brooch is placed (without the pin) with its back against the article of dress to which it is to be attached; the pin being passed through the top plate, the article of dress, and the bottom plate, is turned until its screw takes into the thread in the top plate.

The pin is composed of an ornamental head, a stem threaded immediately below the head, and a threaded plate to which a tube is connected by a chain. The length of the chain is such that when the screw on the stem is passed into the screw in the plate the pin point enters the tube. There may (or not) be a shoulder on the stem so that the pin may (or not) be detachable from the plate.

[Printed, 6*d*. Drawing.]

A.D. 1853, January 24.—No. 173.

PERREYON, Benoit.—(*Provisional protection only.*)—"A "new mode of fastening buttons to garments, and an im- "proved button, and also machinery for manufacturing the "same." The shank of the button "is introduced into a slit "cut in the garment and fastened to an under-button provided "with an open shank or hook."

[Printed, 6*d*. Drawing.]

A.D. 1853, February 4.—No. 304.

JONES, Frederick John.—(*A communication.*)—"Improve- "ments in fastenings for bands, belts, straps, and other "similar articles." The invention is described with reference to a waist belt. A metal plate has affixed at its back on one side a fixed loop and "a stop loop," which is made "rather "longer than the fixed loop," so that "it may not pass "through it when in use;" the bar of the stop loop "is made "angular to enable it to hold the belt more firmly." On the opposite site of the back is fixed either "a piece of metal bent "over so as to form a hook" or a loop similar to the fixed loop.

One end of the belt has either a loop or a hook sewn or otherwise fastened to it, and the belt is secured round the waist by passing the hook into its loop, and by passing the free end through the fixed loop, then through the stop loop, and back through the fixed loop.

The belt can be lengthened or shortened "by pushing the "doubled end back in the fixed loop" and by "shifting the "belt so as to bring the stop loop nearer to or further from "the end.

[Printed, 6*d.* Drawing.]

A.D. 1853, February 11.—No. 366.

SANGUINÈDE, ANTOINE.—(*Provisional protection only.*)—"An improved clasp or buckle." This article is composed of a body and two chapes, one on each side of the body. The body consists of a middle piece bent upwards and two wings bending downwards in the middle and upwards at the outer ends. The chapes are frames having each a longitudinal cross bar; each is fitted to one of the wings by passing the outer end of the wing under the bar and out through the space between the bar and the outer end of the frame.

The sash, belt, or strap is secured by passing the ends over the outer ends of the frames and the bars and back under the bars and over the frames; it is gripped by the ends of the wings; it "should be of the same width as the interior of the "chapes and conceal the parts" over which it passes.

[Printed, 6*d.* Drawing.]

A.D. 1853, February 12.—No. 375.

LYSNAR, GEORGE LEE.—"Improvements in swivel hooks "and such like fasteners." The fixed part is a piece of metal forming a stem and hook, the stem "forming the axis on "which the other parts turn." The moveable part, serving as "part of the side of the hook," is fixed to or made in one piece with a hollow boss, within which is a coiled spring "tending to force and hold the moveable part shut" down on the fixed part of the hook. The customary ring at the top is made with a tube which encloses the stem, and whereon the boss slides. If it is desirable that the moveable part of the hook be prevented from turning, it is "retained in a groove," and "it can only be caused to turn when it has been slided "up the stem of the hook" so as to remove it out of the groove. The ring may be arranged either to revolve or to be a fixture.

[Printed, 6*d.* Drawing.]

A.D. 1853, February 25.—No. 482.

TAYLOR, John George.—"Improvements in ornamental "fastenings for dress." The patentee claims as "novel and "original" the following arrangements "for securing brooches "and other dress and ornamental fastenings."

1. The fastening pin "has its butt-end portion entered "through an eye in a short joint-piece turning on a stud "centre on the brooch frame." The butt-end carries a ring so that it "may be traversed by it back and forward through "the eye;" and a stop-piece on the pin prevents it from moving too far. The catch for holding the pin's point is in the shape of a "heart or duplex curved spring catch." When the point is in the catch, the ring is turned "to embrace a "projection on the joint-piece" thereby preventing any "longitudinal traverse of the pin."

2. The butt-end of the pin is passed "through a partially "opened and slotted guide;" the point is held as before. A stud at the butt-end "slides through a longitudinally slotted "part" of the guide; and when the point is in the catch, the pin is slightly turned so that the stud may enter a lateral slot in the guide. The guide "is of course capable of turning "on the usual joint-stud." A collar on the pin prevents it "from coming entirely away."

3. The butt-end "is passed through a guide set on a "joint-stud;" a collar thereon prevents "all longitudinal "traverse." When the point is sprung into its catch ("the "usual holding catch,") the pin is turned partially round in the guide "so as to bring an eccentric piece fast on the end "of the butt to bear upon the back of the setting."

4. The butt-end carries a ring, a helix, and a collar; it "is entered through a guide socket turning on a stud joint;" when entered, the helix is between the collar and the inside edge of the guide, tending to keep the point in its heart-shaped catch.

5. The spring for holding the point in its catch is "a long "helical spring" covered by a tube; one end is made fast to the setting, the other to a stud at the butt-end which is passed "through a curved-up guide piece in which it has some "lateral play."

6. The pin "is bent round by an intermediate coil from "the opposite parallel piece of metal." The butt-end "has "a flat open catch jointed to it." The point "is sprung "into the open end of the catch, which is capable of turning "on its centre" so as to bring it "into the open end of the "catch which is capable of turning on its centre" so as to bring it into the plane of the two "pieces of wire."

7. The pin "is hinged upon a stud-joint set transversely "in the setting," so that it "may swing round in a plane "parallel with the back of the brooch," and its point can be entered "laterally into a narrow opening in an elastic detent "piece fast on the setting."

Sometimes the pin is fitted with a blade spring instead "of the other elastic connexions for the same purpose."

[Printed, 8*d*. Drawing.]

A.D. 1853, March 4.—No. 550.

McEVOY, Henry.—"An improvement in covered buttons." The object of this invention is to obtain "great strength of "shank and a flatter and more compact button."

A disc of cloth suitable for the back covering, a ring or disc of paper gummed or sized on one side, a disc of thick soft paper or flock, a disc or ring of thin metal, and a disc of millboard, are united by suitable tools. The blank thus formed is placed in a press (the punch of which is provided with four points) and is pierced with four holes; it is found advantageous "to "raise the part under the intended shank in a convex form," and for this purpose the under side of the punch is made concave. A needle carrying strong silken or other cord is passed through one of the holes, then through the opposite one, and back through the other two; the ends of the cord are tied or gummed or glued to the millboard. The protruding portions form the shank, and "from this state the button is to "be completed in the usual way."

The patentee does not confine himself to the number of holes or to the number of times of crossing the cord.

[Printed, 6*d*. Drawing.]

A.D. 1853, March 8.—No. 589.

GLOVER, Thomas.—(*Provisional protection only.*)—"Im"provement in the construction of buttons, and in the mode "of applying the same to gloves and other articles of dress." The button is a metal disc, having a cavity sunk therein, "which leaves it something in the form of an eyelet, with the "exception that the hole in the bottom is of less diameter than "the cavity."

To fasten the button to a glove, wrap "a round bit of soft "metal, as common shot, of suitable size" in the leather of the glove; pass it "into the cavity of the button from behind;" spread or flatten the shot by pressure, "filling up the cavity "of the button, and thereby securing it."

[Printed, 4*d*. No Drawings.]

A.D. 1853, March 24.—No. 720.

JACKSON, George Isaac, and JACKSON, Henry David.—"Improvements in fasteners for buttons." This invention consists in "combining by chain or cord a series of rings or "hooks," each having a spring tongue. The rings "are fixed "at intervals, according to the distance of the holes in the "garment;" they may however be arranged to slide on the chain or cord by means of eyes. The chain or cord is attached to the garment by "swivel, hook, crown, or other device."

[Printed, 6*d*. Drawing.]

A.D. 1853, April 14.—No. 899.

DUMÉRY, Constant Jouffroy.—"Improvements in the "manufacture of paste and enamel buttons." This invention comprises (1) "a new arrangement of machinery," (2) "apparatus for the pulverizing and mixing," (3) "means of baking "by gas and moveable furnaces," (4) "an application for "moulding the paste while heated," (5) "a new composition "of paste," (6) "improvements in the product."

1. The machines are of two kinds, one for making many buttons at a time, the other for making only one at each pressure. The principal parts of the former are (1) an instrument consisting of an upper part "to which is attached the plate bearing the "stamps" and a lower part "into which the counter stamps "enter"; (2) "dynamometrical levers" upon the extremities of which the pressure is made; (3) a "jointed collar" divided into an upper and lower half; (4) upper and lower moulds; (5) "a distributing slide" working in only one direction and

brought back to its first position by springs; (6) a sieve into which "the powder is poured" and in which are a "circular "agitator" and "vertical stuffers" or "small agitators"; (7) a "compressing and cross-bar for the deposit of the buttons "upon the plates" which are borne on an endless chain; (8) "a compressor compressing the buttons"; (9) a "caoutchouc "washer" for the passage of air into the moulds from (10) "a hollow prism situated above the compressor" and containing compressed air; "when the operation of the pressure of "the button mould is at its maximum," the air rushes in "with the rapidity with which it rushes from an air-gun and "produces a perfect perforation of the buttons."

In the latter a ring or collar has a number of holes in its circumference, and in each a mould is placed. At each revolution of the principal shaft the ring "advances one division," and when one of the cavities faces the upper mould, the mould descends and compresses the material; "at the same time the "preceding cavity" is furnished with paste from "the sieve "in which the agitator works." The button, after being struck on the upper part of the ring, and "in consequence of "the rotation of this ring carried to the lower part," is deposited "on a plate of refractory earth called a cupel." At the moment when the pressure is effected, compressed air "is "injected into the interior of the stamp by means of a "spring," and "the matter which stops up the holes becomes "expelled."

2. For pulverizing, a cylinder is formed "with interior "circular grooves" for the reception of bullets which pass over the materials introduced as it turns. The cylinder is divided into chambers by divisions in the form of sieves or network "radiating and having their plane nearly in the plane of "the axis." The sieves "are joined to one another by inclined "planes at the left side which force the material which has "crossed a sieve to descend into the next case." The whole apparatus is arranged "so as to give it an incline at will." Another arrangement is described for materials "which require "a perfect tenuity."

Chemical substances are mixed together in an "elliptical "box" mounted on "only one pivot"; it works "eccentri-"cally"; the closing is "central, that is to say, that it "occupies the place of the second pivot." The framework

" is mounted upon two pivots perpendicular to those of the " ellipse." The gearing is so arranged "that the whole " apparatus can be moved notwithstanding this double perpendicular articulation, which allows of slanting and of even " reversing the whole ellipse whilst it is turning, so as to " empty successively or all at once the balls and the material " which it contains." The elliptical axis "is pierced in places" to introduce the liquids or gases necessary for the operation and to permit those to escape which result from the mixing.

3. The baking apparatus "consists of a long circular gutter " inverted, that is to say, presenting its convex part upwards " and its concave downwards." The concave part "serves as " an arch to a kind of circular gutter occupied by a car of the " same form and dimensions, mounted upon a railway, and " having a continual rotary movement." The car "supports " a construction of brickwork" or materials which may be good conductors of heat and "terminates near the arch by a " surface furnished with small projections for supporting the " plates bearing the buttons."

A "tempering oven" is employed "to remedy the inconveniences of a rapid withdrawal from the oven":—The products are placed in a channel heated at its upper extremity with either the waste heat or a special fire and cooled at its lower part by a current of air. The products are put in and taken out at the lower extremity. The improvement in heating "consists in substituting the direct action of the flame of " any combustible gas" for the heat afforded by coal.

4. A vessel of refractory earth, and shaped like a mortar, and mounted on a stand, is placed in a furnace. The bottom of the vessel and the stand is pierced with a small opening " the prolongation of which in sheet or cast iron crosses the " the masonry or the ashpit of the furnace." The opening in the bottom of the vessel is shut by the aid of an iron ring, covered with refractory earth, "the conical extremity of which " is engaged partly in the hole and thus performs the office " of a valve." When the material is suitably fused, a rod causing the valve to work is raised, and a drop falling out is received "upon a metallic plate having a little division in " which a shank is placed." This method is termed "casting " by gravitation"; another on the same principle is described called "moulding by the mould."

5. The patentee, after mentioning a vast number of materials, says "this part of my patent is intended then for the manufac-" ture of buttons having for their base the silicates and boro-" silicates, simple or multiple, pure or with the addition of" other salts or substances whatever, and obtained by art" either by aid of the direct combination of the constituent" principles of these silicates or boro-silicates, or by the aid of" natural silicates and other salts or minerals, suitably com-" bined to produce a vitrifiable mass."

6. The improvement consists in "rounding the holes on" each side of paste and enamel buttons":—This is effected" either with the aid of the air, or with the upper mould, with" or or without the help of the vacuum," and by "'suppressing" all kinds of piercers for the piercing of the holes."

The foregoing is only a short summary of the contents of the Specification.

[Printed, 4s. 10d. Drawings.]

A.D. 1853, April 19.—No. 939.

NEWEY, Thomas.—"Improvements in fastenings for articles" of dress." This fastener consists of two parts "acting as" hook and eye"; they are cut out to the desired shape from thin plate metal. This fastener "will lie flat to the dress" and will not be liable to injury from the mangle.

The part which acts as a hook is shaped at the outer end "into a sort of neck with an enlarged end or head." The other part is made with "an opening to receive the neck," the portion of metal "left across the outer end of such opening" being sunk somewhat" in order that the neck may rest therein, that the parts may lie "more closely and compactly" together," and that the enlarged end "may rest on the" inner edges of such recessed part." From the opening the metal is slit on each side forming "an elastic tongue;" the end of the tongue next the opening "is lifted in the act of inserting the pointed head of the hook and "again for releas-" ing the hook." The elastic pressure "tends to keep the" head from coming out of the opening."

[Printed, 6d. Drawing.]

A.D. 1853, April 22.—No. 968.

FINCH, Thomas Freeman.—(*Provisional protection only.*) —"Improvements in buttons," more particularly in buttons made of leather and such as are used as fastenings for boots.

The shanks are made of "an elastic substance or material, "such as leather;" they are inserted into the button heads "by the use of a tool formed with jaws." One jaw has a recess formed therein to receive the head; the other is fitted with a steel pin. The operator, having deposited the head in the recess, "places the middle part of the shank upon the "head," and then presses the pin upon the middle part of the shank "until it is forced sufficiently far through the head of "the button to be caught hold of on the other side by another "tool which he inserts after he has withdrawn the pin." He now "forces this last-mentioned tool through the shank until "the shoulder of said tool comes into contact therewith;" he then withdraws the tool and cuts off the greater portion of the shank "which projects above the surface of the head of the "button." The button is now removed to a press and pressed between dies, whereby "the upper part of the shank" is caused "to partake of the required form for the head of the "button."

"An important feature in this invention" consists in attaching the shank in "a dry state" whilst the button head is in "a humid state;" as the head dries, it shrinks upon the shank.

[Printed, 4*d*. No Drawings.]

A.D. 1853, May 4.—No. 1086.

JAQUIN, Cornelius Alfred. — (*Provisional protection only.*)—"Improvements in the manufacture of covered buttons "made by dies and pressure." The inventor improves the colour and texture of these buttons by making the top covers waterproof. For this purpose he uses a textile or woven fabric and also "leather and parchment," made upon the surface "impervious to water or greatly so and yet flexible."

[Printed, 4*d*. No Drawings.]

A.D. 1853, June 20.—No. 1514.

BLATIN, Henry.—"Improvements in buckles." The tongue is caused "to turn back to facilitate its withdrawal from the "leather strap in which it is engaged." This motion is obtained by hinging the tongue on a cranked axle which passes through the arms of the buckle frame and by attaching a lever to one end of the axle. If the lever is lowered, "it will com "pel the excentric to act on the tongue and force its point to "recede from the notch on the strap;" this movement "causes the tongue to release the strap with facility in spite "of the strain exerted and the tension or thickness of the "strap." A stud keeps the lever at rest.

[Printed, 8*d*. Drawings.]

A.D. 1853, July 6.—No. 1607.

NEWEY, Thomas.—"Improvements in fastenings for wearing "apparel." This fastener is an improved "hook and eye." The parts are made from sheet metal. The tongue of the hook is produced "by cutting a portion from the body thereof "and then stamping or pressing such portion into form to "receive the eye and hold it by spring pressure." The eye is cut to the desired shape, "but an ordinary wire eye may be "used."

The eye is passed "under the turned-up end of the tongue "until it is received within the projecting part," where it is retained by the shape of the tongue, "but so as to be readily "released when desired by the elasticity of the tongue." Eyelet holes at the outer ends of each part prevent the cutting of the thread.

These hooks and eyes will be found "readily to resist with- "out injury the action of the mangle."

[Printed, 6*d*. Drawing.]

A.D. 1853, July 19.—No. 1712.

FONTAINEMOREAU, Peter Armand, le Comte de.—(*A communication.*)—"A new mode of fastening buttons to gar- "ments, and an improved button; and also in machinery for "manufacturing the same." The buttons are fastened by passing the shanks through the material of the garment and then by passing through each shank "an under button made

" with a hook " called by the inventor a button hook. This button hook consists of a wire bent up in the middle and riveted or otherwise fixed at one end to a washer.

The machines in which the wire and the washer are formed are frames made in halves and fastened together by pins or bolts. One frame contains (1) " a small iron plate fixed by a " screw, the bottom of which projects at right angles so as to " stop the metal rod forming the hoop ;" (2) a knife for cutting off the required length ; (3) a top piece "for giving when pressed " down the curve to the rod"; (4) an " empty space allowing " the hooks to fall down when made." The other frame contains (1) a punch for cutting a metal plate into washers; (2) a punch "having a slightly projecting edge for cutting and " curving the washer so as to receive the hook ;" (3) an " annular space through which the washer passes while being " cut."

Tin buttons for uniforms are made by casting. While the metal is being cast, a shank is introduced, " which remains " fixed on cooling."

[Printed, 10*d*. Drawings.]

A.D. 1853, August 31.—No. 2023.

ILIFFE, Henry Jeremiah, and NEWMAN, James.—" Improvements in the manufacture of buttons." The first improvement relates to covered buttons "composed either " solely of composition or of a composition in combination " with a single or double metal shell :"—The composition consists of 6 parts of pulverized pumice stone, 3 of resin, 1 of alum, and 1 of beeswax, mixed and melted together. A portion is roughly formed into a half-round or other suitable shape ; a Florentine or other covering is placed round it ; the whole is put into a die and pressed into shape. A tuft piece is then cemented to the back, or a metal shank is inserted " and by the " hardening of the composition when cold is securely main- " tained in its position." If the button is to be strengthened with a metal shell, the shell (with an aperture in the centre) is laid on the back of the composition ; the tuft or shank is brought through the aperture ; the covering is brought over the face and "firmly pressed beneath an edge or flange on the " under side of the shell." If a double shell is employed, the button is made up "in the same manner as for a Florentine,

" with the addition of the composition under the covering and " on the face."

Another description of double shell button is made as follows :—Two shells are stamped into a hemispherical shape and perforated through their centres, the hole in the upper shell being countersunk. A shank of wire is bent into a loop, and one end is flattened into a small butt or knob, (or a piece of cord is passed through the upper shell) "the butt filling up " the countersinking." The shell is covered with fabric which passes over the edge into the inside and is kept in place by filling the shell with composition. The under shell is similarly treated; the loop end of the shank is passed through it; and " the flat sides of the two halves of the button are brought " closely together." A washer is put over the bent wire, and the loop is opened out.

The second relates to "covering composition buttons with " raw or unmanufactured fibrous materials :"—Floss silk, hair, cotton, or other analogous material, is placed in the die from which the button is to receive its form and impression; the button, before it is put into the die, may be covered with cement; the material sticks to the composition, and the surface is afterwards smoothed in a heated die.

The third relates to "ornamental sewn-through covered " buttons :"—Silk, satin, velvet, or other ornamental covering is used instead of linen; "round the eyelet in the centre which " is turned up from the upper shell" there is fixed "any " ornamental figure," which is secured on the face of the button "by being clipped and pressed under the eyelet."

[Printed, 4*d*. No Drawings.]

A.D. 1853, September 6.—No. 2053.

POPE, Thomas and BUFTON, Edward.—" Improvements " in buttons, and which improved buttons they propose to " designate by the name of Buffalo buttons." These buttons are made from the horns of animals, "such horns being cut " open and laid flat, a process easily done after being softened " by heating." The buttons are turned in a lathe "having " two tools brought together from opposite directions" so that a back and front may be turned simultaneously; after the turning they are drilled and polished. The following mode of polishing has been found to answer well :—The button is partially polished on the front, back, and edges "by a process "well known and understood as buffins." On the face of a piece of wood "deep enough to be held in a common vice and "long enough to take a dozen or more buttons" are fixed pins sufficiently apart to enter the holes drilled through the buttons. The operator rubs the buttons (properly arranged) with a leather or cloth charged with rottenstone and oil, and afterwards with his bare hand. If the buttons are to have a cup or convex face, they should be first turned flat, drilled, and polished; the cup face is then given by warming them and pressing them "between a pair of tools."

If the buttons are to be shanked, drawn wire of a semicircular form is bent until the flat sides come together; it is then passed through tools "forming a head to the shank," put through the button, and opened out at the back. An ornament may be soldered to the head.

The method of shanking admits of modifications which are described in the Specification.

[Printed, 6*d*. Drawing.]

A.D. 1853, September 7.—No. 2059.

SMITH, William Joseph.—"Improvements in buttons or "other such fastenings, and in applying or affixing them to "wearing apparel." The button (of any material) or button top is either dished or flat "and has one large hole (which may "be of about one third its diameter) in the centre thereof." It is attached to wearing apparel "by means of a hollow rivet "(formed as a small tube) and washer."

The neck of the rivet is passed through the hole in the button and through the cloth or other material; the washer is placed over the other end of the rivet at the back of the cloth, and the whole is secured together by compression.

The rivet may form part of the button, so that "it would "in such case only comprise two pieces, the button and the "washer."

For boots and shoes "where the hole in the top requires to "be made up or closed so as to prevent the admission of "water," a metallic cap is added; it may be detached and placed over the neck of the rivet, or be soldered on to it, or be "punched on at the time of closing up the whole."

[Printed, 6*d*. Drawing.]

A.D. 1853, September 29.—No. 2230.

ILIFFE, Henry Jeremiah, NEWMAN, James, and JENKINS, Henry.—"Improvements in the manufacture of buttons." This invention relates to (1) the manufacture of "covered ball, flower, and drop buttons;" (2) the manufacture of covered buttons "having any ornamental or irregular "outline;" (3) the production of "sunken or intaglio devices "upon the shell or surface of buttons."

1. A blank "of the quatrefoil shape" is put into a die wherein its edges are "struck up." The covering "cut out to "the requisite form" is placed in the blank, and the edges are doubled down on the covering in another die. The leaves are then bent back, the edges "being on the outside," to accomplish which the blank "is placed between a pair of bullet "mould forming dies, according to the form of which it receives any required shape." The shank, if of metal, "may be pressed out of the blank before covering;" otherwise it is made by passing a piece of cord or other fabric through a hole punched in the blank and securing it on the inside.

If the button is to be completely covered "without leaving "the metal edges," two blanks or shells are required, the inner one being smaller than the outer one. The covering is larger than the outer shell so as completely to cover it "and "allow a margin to be turned over the flange, which is kept "in place by the second shell." The whole is secured together by pressing down the flange "in the manner in which "Florentine buttons are covered." The leaves are then "doubled in the reverse way inwards," and by pressure in the forming mould "are brought into the shape of a ball "flower."

2. Suitably shaped dies and moulds are employed "having "outlines corresponding to that required on the button;" by aid of these metal blanks are struck out, which are covered and made up in the same manner as the Florentine button.

3. To produce these buttons there are required "metal "shells perforated by a suitable die" and moulds "having "inside projections exactly corresponding with the perforations." The covering is placed in the mould; the blank is then fitted in; and the projections force the covering through

the perforations. The covering is secured in this position by some adhesive matter or gummed paper.

[Printed, 6*d*. Drawing.]

A.D. 1853, September 30.—No. 2236.

WILLIS, JAMES.—"Improvements in gig harness." One part of this invention relates to an improved kind of buckle. The tongue slides longitudinally through the cross bar instead of being hinged thereto. Sometimes the buckle is made with two cross bars affording thereby a better support for the tongue. Again, the tongue is bent "at right angles to the plane of the "strain at that point which receives the strain" from the strap. The strap can be disengaged only "by pushing back "the free end and drawing back the tongue."

[Printed, 6*d*. Drawing.]

A.D. 1853, October 11.—No. 2330.

ROWLEY, CHARLES.—"Improvements in ornamental dress "fastenings." This invention is described under five heads.

First, "a peculiar form of hook" applied to an ornamental front of any description suitable for "buttons, studs, or clasps" and forming "a desirable fastening for ladies' dresses, gentle-"men's vests, and boys' or soldiers' belts:"—The hook is shaped "somewhat in the form of the letter S and is soldered "or otherwise fastened to the ornamental front." When used as a belt fastening, the hook passes through a slot in one end and takes into one of a row of holes in the other end or into a hole punched through a moveable slide. When the hook is fastened to a button or stud, it answers the purpose of "the "common shank;" in ladies' dresses "it can take the place of "the common hook and eye."

Second, a form of loop for holding "fancy vest buttons:"—This loop (which passes through the shank) is shaped either as "a single bow" or as "a double bow or form of a figure 8."

Third, a mode of securing shirt studs "by the application of "spring shanks:"—This shank also is shaped somewhat like the letter S; the advantages claimed for it are that the holes in the shirt front may be "much smaller" than usual, and "the applying or removing of such studs" is attended with less difficulty and "rumpling of the shirt front."

Fourth, a "mode of protecting (when in use) fancy dress " pins:"—Part of the stem is hollow; within the hollow is a wire provided at the top with a projecting part and at the lower end with a projecting "barb point;" slots in the stem allow the wire to slide up and down, and the barb point is hid " or exposed as the inner wire or pin is drawn up or down."

Fifth, a mode of securing the pins of brooches when in use: —A small curved or straight pin working in guides is "pushed " out like a small bolt" and "prevents the pin of the brooch " from unfastening."

[Printed, 6*d*. Drawing.]

A.D. 1853, October 19.—No. 2407.

FONTAINEMOREAU, PETER ARMAND, le Comte de.—(*A communication.*)—(*Provisional protection only.*)—" An improved " composition to be applied in substitution of bone and horn." This composition can be employed in the manufacture of buttons and other similar articles imitating horn and bone.

The ingredients are cotton, leather, or other analogous substances, mixed with gelatine, resin, and tannin, in proportions " to be determined by the character of the intended applica- " tion." The product when dried possesses "a hardness and " brilliancy resembling bone or horn;" the principal advantage resulting is its small cost.

[Printed, 4*d*. No Drawings.]

A.D. 1853, November 11.—No. 2612.

WILLIS, JAMES.—"Improvements in buckles." There are two novelties in this buckle. The tongue, instead of being jointed or hinged to the cross bar, slides through it. Again the point of the tongue which usually rests upon the buckle frame is bent up at a right angle. The back end of the tongue has an enlarged head.

To disengage straps held together by this buckle, "the " tongue is pushed back through the cross bar."

In some buckles there is (for the attachment of one strap or end of strap) an extra cross bar "on the back end of the " tongue behind the fixed cross bar through which it passes." In others the frame has a double end, the cross bar being in the middle.

[Printed, 6*d*. Drawing.]

A.D. 1853, November 17.—No. 2669.

BOURNE, Thomas.—"Improvements in the construction of "buckles." This buckle is applicable for all purposes "wherever the speedy releasing of the strap from the buckle "is desirable."

The tongue is attached to the cross bar in the ordinary manner. The upper portion of the frame (whereon the end of the tongue rests) is "double or split;" the upper part is hinged to the under part and may (or not) be provided with a spring to facilitate its opening when required to loose the strap; the lower part is "cut away," so that when the upper part is raised up, the tongue "falls through," and "consequently it instantly lets slip the tongue from the strap it "previously held." On the sides of the under portion are studs which enter corresponding holes in the upper portion, securing the two portions when closed, "and the studs or "holes may have spring catches when required."

[Printed, 8*d*. Drawings.]

A.D. 1853, November 18.—No. 2683.

O'NEILL, Patrick Benignus.—(*A communication.*)—"An "improvement in the manufacture of perforated buttons." This button is made with a central hole and other holes or openings between the ring round the central hole and the rim of the button.

The button "will be held to a garment by the thread binding down the ring of material which bounds or surrounds "the central hole."

[Printed, 4*d*. Woodcuts.]

A.D. 1853, December 17.—No. 2945.

COCKINGS, James Septimus.—"Improvements in buttons "and other dress fastenings, part of which is also applicable "for other purposes." The first part of this invention relates to a material for the filling or packing of covered buttons:— The material consists of two sheets of paper having between them a layer of "sawdust, water, a little alum, with glue, "parchment shreds, or any other suitable glutinous material," mixed and boiled on a slow fire to the consistency of paste.

For the manufacture the patentee uses by preference a slate table kept warm by gas or hot water. When the material is made, he passes a roller over it, removes it from the table, and dries it. He finds it more readily removable from the slate table by turning the table with the material on it into a frame of wire gauze. The material is cut up into discs in the ordinary way. If the discs are to have projections, &c. on the back, suitable cavities are to be sunk in the slate.

The second part relates to using "hollow" wire for "button "shanks, dress fastenings, and other purposes" (several of which are mentioned in the Specification), the object being to "effect a considerable saving in the weight of the raw "material, independent of its being lighter."

[Printed, 4*d*. No Drawings.]

1854.

A.D. 1854, January 23.—No. 159.

ROWLANDS, JOSEPH.—(*Provisional protection only.*)—"An improved fastening to be used instead of buttons, "buckles, clasps, snaps, hooks and eyes, and other similar "fastenings." This invention is described as a guard "to "prevent the accidental escape of the button or knob fixed "to any strap, cord, or other material from the corresponding "eye, slit, or hole made or formed in another strap, cord, or "other material, and to which the former is to be fastened."

This object is effected "by the position of a spring formed "in the part having the eye, slit, or hole therein, and in the "same plane therewith." The button, &c. can only be placed in or removed from the slit, &c. "by pressing the said spring" so as to allow the button "to pass between the spring and the "surface of the part in which such spring is formed."

When the button "is not of the same width as the slit," it "is kept in position by means of a slot made in the lower part "of the spring, such slot being of less dimensions than the "head of the button."

[Printed, 4*d*. No Drawings.]

A.D. 1854, January 30.—No 221.

ILIFFE, HENRY JEREMIAH, and BROUGH, NEHEMIAH.—(*Provisional protection only.*)—"Improvements in the manu-" facture of buttons and attaching them to articles of wearing " apparel." The buttons consist of "a shell either of one or " two blanks" formed into a shape shown in a woodcut and " without any holes in the centre." The shanks are not attached to the shells until after they have been passed through the wearing apparel; they are stamped out in the form of a cross and bent up into prongs.

To attach such a button to a garment, the shell is placed in the required position; the prongs are passed through the material from the other side into the shell; and a "smart " blow with a hammer then spreads them out between the " upper and under sides of the shell."

Sometimes holes are made in the under part of the shell to suit the number of prongs, instead of the whole centre being cut out, as is shown in the woodcut. Sometimes the shank consists of a cap "similar to a percussion cap in form but flattened at the top to produce a rim;" this shape of shank requires the use of a washer.

[Printed, 4*d*. Woodcut.]

A.D. 1854, January 31.—No. 230.

COX, THOMAS.—(*Provisional protection only.*)—"Improve-" ments in buttons and in attaching the same to articles of " dress." The shank of the button consists of "a rod or " cylinder of gutta percha" about half an inch long and connected to the body of the button.

An eyelet or other hole is made in the article of dress where the button is to be attached; the stem of the shank is passed through the hole; the projecting portion is then warmed until it is sufficiently soft to be easily moulded; and it is then pressed with the finger or otherwise "so as to flatten it into " a head, which when cool firmly secures the button to the " garment."

[Printed, 4*d*. No Drawings.]

A.D. 1854, January 31.—No. 233.

HOLLINGSWORTH, THOMAS.—"Improvements in forming " or applying tags to laces." The tags are made of gutta percha moulded into shape and having a cavity left at one end to admit the end of the lace.

The end of the lace is covered with a solution of gutta percha and compressed to fit the cavity; it is then dipped into a heated solution of gutta percha and placed in the cavity; the whole is then securely united in a hot mould.

Other plastic material may be used, and the patentee does not confine himself to the foregoing details.

[Printed, 4*d*. No Drawings.]

A.D. 1854, February 7.—No. 299.

BELLFORD, AUGUSTE EDOUARD LORADOUX.—(*A communication.*)—(*Provisional protection only.*)—"Improvements in "the manufacture of artificial stone," applicable to buttons, articles of jewellery, porcelain, &c.

The raw material "from which artificial stone is generally "formed" having been fused, pulverised, and heated, unbleached wax (about 4 or 5 parts to 100 parts by weight of powder) in a melted state is thoroughly incorporated with it, and the mass is ready for use. When the articles are formed from this paste, they are exposed in drying stoves and on plates of fire clay to a temperature "sufficiently high for "volatilizing the wax." They are afterwards burnt in a furnace, wherein is "a horizontal tube of fire clay" shut at one end and surrounded by the burning fuel; they are put into this tube to protect them from "the oxydizing action of the "air in the furnace."

Marbled or striped articles are produced from layers of differently coloured substances prepared with wax and caused to adhere by pressure; the blocks are cut transversely into thicknesses; each thickness forms a striped mixture for the production of the articles.

If the button is to have a metallic shank, the button mould "formed in a plate of fire clay" has a cavity at the bottom for the insertion of the shank, and "the space about the portion "of the shank that has to be out of the button is filled "up with melted tallow." The plate being subjected to a melting heat, "the root of the shank will be firmly fixed in "the melted matter." When the button is cool, it is finished by inserting the shank into a plate of fire clay and submitting it "to a glazing heat."

[Printed, 4*d*. No Drawings.]

A.D. 1854, March 10.—No. 587.

JOHNSON, John Henry.—(*A communication from Jean Medard Payen.*)—(*Provisional protection only.*)—"Im-"provements in the manufacture of hollow jewellery." Articles of jewellery and trinkets of various kinds of metal are formed hollow by making them on a mandrel of iron. This mandrel "is afterwards dissolved by the action of diluted "sulphuric acid leaving merely the shell of the article "intact."

[Printed, 4*d*. No Drawings.]

A.D. 1854, March 28.—No. 711.

HIPKISS, Joseph.—(*Provisional protection only.*)—"A "new or improved dress fastening," namely a substitute for the ordinary hook and eye. This fastening consists of two (nearly rectangular) parts cut out of sheet metal. Each part is pierced at the outer end for attachment by sewing. One part has its inner end turned-up at a right angle, and the turned-up portion is slotted. The other part has a tongue (with a vacant space round three of its sides) stamped or cut out of it.

The parts are united by passing the slot over the tongue.

[Printed, 4*d*. Woodcuts.]

A.D. 1854, April 22.—No. 927.

FINCH, Thomas Freman.—"Improvements in the manufac-"ture of buttons." These buttons are made of leather; they are suitable for boots, shoes, gaiters, &c. The method of manufacture is as follows:—

A piece of sole leather (in a damp state) is secured to a bench, and circular discs are cut out of it by means of a brace and centre-bits. The hole made in each disc by the centre-bits is opened out with a punch, and the disc is ready for forming the head of the button. The shank is cut out of what is known as upper leather, the ends being "larger than the "centre." The central portion of the shank is forced through the hole in the disc and caused "to form a loop at the under "side" of the disc. A hole is pierced laterally through the disc and that portion of the shank which is in the hole thereof, and a wire or wooden peg secures the two together. The ends of the shank are "trimmed off the head," and the button (dyed or not) is put into a heated die and pressed.

Other material may be used for the shank. Sometimes the wire or peg is dispensed with, and the shank is secured simply by pressure.

Figures in the annexed sheet of drawings "represent a com- " plete series of machines and apparatus" for manufacturing buttons according to this invention "on a more extensive scale " than the arrangements before described," but the patentee does not assert a claim thereto.

[Printed, 10*d*. Drawing.]

A.D. 1854, May 5.—No. 1003.

STEWART, Henry.—(*Provisional protection only.*)—"A " pocket protector and pocket." The pocket is "a chain " pocket" or "a pocket of any material with the insertion of " a chain or wire which will prevent its being cut away."

The inventor does not describe the manufacture of the protector; he says "the accompanying drawings show the pro- " tector in different forms, with springs, catches, slides, &c." The protector "can be made of any material."

[Printed, 6*d*. Drawing.]

A.D. 1854, May 22.—No. 1124.

ROSE, Kosman.—(*Provisional protection only.*)—"Improve- " ments in buttons." Two tongues are cut out of the metal disc which is to form the button head, one from each side of the middle portion. The tongues are bent down at right angles to the under side of the disc, "serving as the stem of " the button;" they are passed through the article to which the button is to be attached, and are made fast thereto "by " bending the pointed metal backwards or against the cloth." A perforated washer may be applied, and the tongues may be bent back over it.

The inventor does not limit himself to the number of tongues nor to cutting them out of the disc, as they may be soldered or riveted to it. Sometimes he forms out of the disc or attaches thereto "a short central tube" instead of tongues; this he secures to the cloth, &c. by forcing its outer edge over a flat ring by aid of a punch.

[Printed, 4*d*. No Drawings.]

A.D. 1854, May 22.—No 1133.

FASE, Berkeley William.—"An improved construction of "brooch for fastening dresses." The articles to which this invention relates are "constructed upon the plan of those "known as Celtic brooches," and the object of the invention is to prevent the pin "from projecting beyond the frame which "carries it."

The frame of the brooch is oval shaped, or the inner diameter is otherwise contracted "in the direction in which "the pin of the brooch lies when in position," and a groove or rest is formed in the frame "to receive the end of the pin "when the brooch is in use." The pin "hangs loosely as "usual in the frame and is capable of sliding thereon."

When the brooch is to be applied to a garment, the pin is slidden round to the largest diameter of the frame; this being greater than the length of the pin, "will allow the point of the "pin to drop and take a position for being readily inserted "into the garment." When the pin is inserted, "its point is "elevated above the frame," and the frame is slidden round to bring the groove or rest under the point of the pin.

[Printed, 6*d*. Drawing.]

A.D. 1854, June 6.—No. 1257.

BROUGH, Nehemiah.—(*Letters Patent void for want of Final Specification.*)—"Improvements in the manufacture "of buttons, and in attaching them to articles of wearing "apparel." The buttons are composed of a "face and back "shell" put together "in the usual manner" and of pronged shanks detached from the shells. The prongs may be bent into various positions, some of which are shown in the annexed woodcuts.

To attach the button to a garment the "pronged shank is "passed through the cloth or other material," and "the "button being in its desired position on the other side, the "points of the prongs are inserted into the perforations or "hollow in the under side or back shell." A blow or pressure forces the points "between the front and back shells," spreads them out, and clenches them into the button.

Sometimes the shank is made without prongs, "somewhat "similar to a percussion cap" with a rib at the top. This shank is passed through a washer, through [a hole punched in the cloth, and into the back shell; it is then flattened by a blow or pressure "which splits the shank and secures it in "the button."

[Printed, 4*d*. Woodcuts.]

A.D. 1854, July 13.—No. 1541.

HACKETT, John.—"A new method of fastening the ends of "india-rubber elastic cord and india-rubber elastic web." The patentee describes his new method in its application to "coat "loops."

To fasten the ends of a loop made of elastic web to a button, he passes the web through the shank, lays the ends together, fastens them together with a few stitches, places a bent bit of metal (which he calls a wrapper) "in the mouth of a tag-"fastening machine," holds the loop on it on the stretch, and wraps the metal "entirely round the two ends and sides." If the loop is of elastic cord, he lays the ends alongside of each other for about an inch, instead of stitching them together.

To fasten the ends to a "cylindrical or other shaped article," he puts the ends stitched as before-mentioned round the article at or about the middle thereof and then wraps the metal around as above described. Or he forms a shank on the article by means of a piece of wire and passes the ends through the shank.

The mouth of the machine should be "much shorter" than the mouth of the ordinary tag-fastening machine.

The invention is applicable to fastening the cords on which beads, &c. are strung.

[Printed, 4*d*. No Drawings.]

A.D. 1854, July 17.—No. 1567.

NORTH, George.—"An improved apparatus to be attached "to garments for protecting watches, purses, and other arti-"cles from being stolen from the person." This apparatus consists of (1) a convex or other plate; (2) a spring riveted on the plate; (3) a hook or catch abutting on the spring and riveted on the plate; (4) a second plate which is placed "on "the side of the garment nearest the person"; the rivets pass through both plates and their inner ends terminate each in a hook or catch for securing the ends of (5) a fastening bar which turns on a pivot on the second plate. "The whole can be "made fast to the garment and yet may be released by the "wearer as occasion may require." The watch ring or a ring attached to a purse "is to be slipped into the catch "between it and the spring."

The invention admits of several modification of the plates and springs, which are described in the Specification.

[Printed, 6*d*. Drawing.]

A.D. 1854, August 14.—No. 1770.

HAWORTH, PETER.—(*Provisional protection only.*)—"An "improved belt, band, or strap fastener." One part of this fastener is a metal plate, to the back or inner surface of which are secured three bars, two for the reception of the belt, the third for the reception of the other part or connecting link. Two of the bars are placed "within a small distance of the "vertical edge of the plate," the other is fixed "very near to "the bar under which" the belt passes. The belt is brought under the two bars, then "returned over the inner bar and "under the outer," so that the greater the pressure on the belt "the more securely is the fastener retained." The connecting link is "a bent piece of broad metal plate, having a "slot wherein to receive and secure one end" of the belt.

[Printed, 4*d*. No Drawings.]

A.D. 1854, August 19.—No. 1825.

BROUGH, NEHEMIAH.—"A new or improved dress fastening," suitable for fastening articles of dress in general, but more especially belts and garters.

This fastening consists of two parts, each having a bar at its outer end for attachment to the belt or other article. One part is formed with "a circular or elliptical perforation," the other carries at its inner end a head "of a somewhat larger size in "one direction than the perforation." Parts of the head are shoulders or flanges which engage under the edge of the perforation.

In order to fasten the parts, the one with the head must be raised so as to make an angle with the plane of the other; it is then readily introduced into the perforation, and when lowered into the same plane, the shoulders engage under the edge thereof.

[Printed, 8*d*. Drawings.]

A.D. 1854, September 8.—No. 1959.

FREARSON, SAMUEL.—(*A communication.*)—"Improve-"ments in the construction and manufacture of buttons, a "part or parts of which improvements may also be applied to "other similar purposes." The improvements relate principally to perforated buttons made either of metal, or of moulded plastic substance, or of wood, bone, or horn.

The button is pierced with two circular or nearly elliptical holes, each surrounded with a depression or countersink "open-"ing into one another" and thereby giving room for the "thread by which the button is attached." The bar which separates the holes not having "parallel sides" prevents "any "play or sliding motion of the said bar in the thread."

The button may be pierced with two holes "of a nearly "elliptical figure, the outer sides of each hole being portions "of the same circle," and the inner sides "being portions of "circles having the same radius as or less than the circle "forming the outer sides."

The buttons may be made of two shells or a single shell; in the former case the edges of the holes are turned inwards; in the latter the edges are turned over or rounded by pressure, according to the thickness of the metal. The button is sometimes covered or partly covered. Sometimes a disc is inserted between the shells. Sometimes one shell is pierced with a single central hole, the other with two holes.

The tools and dies used "are made wholly or mainly by "turning in a lathe," nearly all the parts of the same "being "cylindrical or conical."

The invention includes "an improved feeder, by which "blanks too thin to be fed by the ordinary feeder are supplied "to the dies for raising shells for buttons":—A plate as thick as one blank slides under a tube containing a pile of blanks, and at each advance pushes the bottom blank from the pile. A saddle placed on the plate strengthens it "without interfering "with the thickness of its working parts." A block, capable of a vertical sliding motion, pressed downwards by a spring, and having its lower edge bevelled, prevents more than one blank at a time from passing under it. This feeder may be used in eyelet machines.

[Printed, 10d. Drawings.]

A.D. 1854, September 28.—No. 2081.

CROSSE, Aretas Young.—(*Provisional protection only.*)—"Improvements in the manufacture of buttons." The upper part of the button is removable from the lower or shank part, "so that different sets of buttons varying in material and "design may be readily adapted or applied to the garment."

The shank part is cup-shaped or of similar form and perforated for sewing on; the upper portion is screw-threaded. The upper part of the button is correspondingly threaded and is screwed to the shank part after the latter is sewn on. Or the shank part may consist of a disc with a screw rising from its middle; the screw is passed through a hole in the garment, and the top part is screwed on.

[Printed, 4*d*. No Drawings.]

A.D. 1854, October 21.—No. 2246.

SMITH, William Joseph. — "Improvements in buttons." This invention applies to buttons which have covered surfaces ornamented with a pattern, "which has hitherto been produced "by weaving" or similar means. The improvement consists in the employment of "embossed india-rubber cloth;" this, says the patentee "will considerably improve the durability "of the covered button and have an equal effect or appearance "to those figured buttons ordinarily produced." He wishes it to be understood that by india-rubber cloth he means any plain or fancy cloth coated with a solution of india-rubber either by itself or in combination with any other material at present in use for making such cloth. The cloth may be of any desired quality or colour, and it may be embossed by any suitable means immediately after it is manufactured, or at any time before or after it is applied to and becomes part of the button, or during the process of its manufacture. The buttons are made "by the usual methods."

[Printed, 4*d*. No Drawings.]

A.D. 1854, November 18.—No. 2445.

GAUNT, Richard.—(*Provisional protection only.*)—"A "new or improved dress fastening." This fastening (made of wire or sheet metal) is intended to be used instead of the ordinary hook and eye. It is composed of two separate parts, the one made with two openings which are connected by a neck, the other consisting mainly of a neck which carries a stud at its outer end. Both parts are provided with holes for attachment to the garment.

The stud is thrust through the inner and broader opening and drawn over the outer and narrower one. "By bringing " the two parts into the same plane the fastening is effected."

[Printed, 4*d*. Woodcuts.]

A.D. 1854, November 24.—No. 2481.

CARPENTER, Samuel Alfred.—(*A communication*)—" A " new or improved buckle or substitute for a buckle," especially " applicable " to the fastening of braces, garters, and such " belts and straps as are used for fastening articles of dress."

The fastening consists of plates of metal jointed together; the front plate is curved, and the upper portion of the under or back plate above the joint is turned at a right angle to the front plate. The strap, &c. is passed freely between the parts; and when it is adjusted as to length, the upper portion of the back plate is brought to bear against the front plate and compresses or wedges the strap between the plates.

The invention admits of modifications; sometimes a tongue is added to the under or back part "for the purpose of attaching " one end of the belt or strap" to it.

[Printed, 6*d*. Drawing and Woodcuts.]

A.D. 1854, November 30.—No. 2517.

QUIQUANDON, Jean Baptiste André.—(*Provisional protection only.*)—"Improvements in manufacturing corks, and " in the mode of employing their residues or wastes." The inventor describes a machine for shaping pieces of cork and for obtaining the residue or waste " in the state of fine powder " instead of in chips or fragments."

He mixes the powder with "caoutchouc, gutta percha, resin, " tar, boiled leather, papier maché, kaolin, felspar, or other " plastic composition capable of being moulded, stamped or " carved," and from the mixture makes a number of articles, among which he mentions buttons and rosettes.

[Printed, 4*d*. No Drawings.]

A.D. 1854, December 21.—No. 2697.

SMITH, Jabez.—"An improved buckle or fastening." The buckle portion of this fastening is a metal loop; at about the middle of one side is fixed a rigid tongue or a stud; the former projects outward, the latter upward. On the opposite side of the loop are holes for attachment to any article; or the loop may be attached by a tape. The other portion is a tab or strap pierced with holes at intervals and furnished or not with eyelets.

In order to use this fastening "the tab is drawn into the " loop, turned back, and one of the eyelet holes placed over " the tongue or stud." The tongue is slightly bent "in order " to allow of the ring of the eyelet hole fitting nicely against " the shoulder."

Modifications:—The tongue may be stamped up or otherwise formed in the face of the loop. A friction roller may be inserted between the sides of the loop. There may be two tongues or two studs.

[Printed, 6*d*. Drawing.]

A.D. 1854, December 28.—No. 2737.

HAWORTH, Peter.—"An improved belt, band, or strap " fastener." One part of this fastener is a plate of metal having secured to its back or inner surface three bars which serve as slots or loops. Two of these bars "are placed within a " small distance of the vertical edge of the plate;" they form spaces for the reception of the moveable end of the belt. The third bar is situate for the convenient reception of the hook of the other part or "connecting link between the belt, band, " or strap fastener." This other part is "a broad bent piece " of metal," slotted at one end for the admission of the fixed end of the belt and hooked at the other end.

The belt is adjusted as to length by passing the free or moveable end under the two bars, returning it over the inner one (which is square or angular for the purpose of " better binding or biting" the material) and under the outer one; the hooked end of the connecting link (to which the other end of the belt is fixed) is then passed round the third bar. The hooked portion "is notched at the lower part of the "bend" so that by falling over the bar "it is secured from "being slipped off the bar."

By the foregoing arrangement "the greater the pressure "on the belt" the more securely "is the fastener retained."

[Printed, 6*d*. Drawing.]

1855.

A.D. 1855, January 19.—No. 145.

ISAACS, SAMUEL.—"Improvements in the manufacture of "artificial coral." The base of this artificial coral is alabaster, and the details of the manufacture "may be greatly varied." According to one method the alabaster is formed into the article desired or nearly so, and is put into "dilute oil of "vitriol" for about 48 hours; the proportions are about 200 drops of oil of vitriol to 1 gallon of water, by preference rain water. The article is then subjected to the action of the atmosphere for about 20 hours; or the temperature may be gradually heated, and it has been found of advantage "to "heat the articles up even to 250° of Fahrenheit when surrounded by atmospheric air." When the article is nearly cooled down, it is either saturated with oil or grease and then dyed and polished, or immersed in a dye bath for about 5 hours, then polished, then subjected to the action of the atmosphere for about 2 days, and then immersed for about 6 hours in grease or olive oil. Finally, the article is washed with warm water and if required polished.

According to another method the article, after being treated with dilute acid and dried in the open air, is heated in an oven, the heat being gradually raised to about 250° Fahr. If the article can be made hollow, there is put into it "fine "powder of real dark red coral" together with some "deposited "carbonate of iron made up into a paste with oil or grease;" or it may be surrounded with a wall of suitable material, "and "the oil and colouring matters with the powder of coral placed "therein." The article thus treated is "to be polished and "finished as if of real coral."

[Printed, 4*d*. No Drawings.]

A.D. 1855, February 17.—No. 359.

HACKETT, John.—(*Letters Patent void for want of Final Specification.*)—"A new and improved fabric or fabrics for "the manufacture of umbrellas, parasols, and buttons, and "for other purposes." The fabrics claimed are composed of (1) at least two thirds of the warp threads and at least two thirds of the weft threads of doubled and twisted two-thread cotton; (2) at least two-thirds of the warp threads of doubled and twisted cotton and two-thirds of the weft threads of doubled and twisted worsted, or, says the inventor, "I use the same "alternating each;" (3) at least two-thirds of the warp threads of doubled and twisted cotton and at least two-thirds of the weft threads of doubled and twisted mohair, or "the same "materials alternating each;" (4) at least two-thirds of the warp threads and two-thirds of the weft threads of doubled and twisted mohair, or of doubled and twisted worsted.

[Printed, 4*d*. No Drawings.]

A.D. 1855, February 21.—No. 380.

ORGAN, Thomas, and PITT, George.—"A new or improved "dress fastening." This fastening consists of two thin strips of sheet steel or other metal, each pierced with a row of holes for attachment to the dress. On the opposite side of one strip are projecting eyes at equidistant points, and on the opposite side of the other are corresponding hooks. The patentees prefer to strengthen the eyes by pressing them "so as to "make them convex on one side and concave on the other."

[Printed, 6*d*. Drawing.]

A.D. 1855, March 3.—No. 473.

RYLAND, Thomas Henry.—(*Provisional protection only.*) —"Improvements in the manufacture of neck and dress "chains, bracelets, and other ornamental articles of dress, "and in links used in the manufacture of the said chains and "other ornamental articles of dress." The chains are made of wood. The links are turned or otherwise constructed; they are connected "by dividing alternate links on one side and "springing the intermediate links in the said divided ones;" the divided parts are then glued or otherwise joined together.

Or alternate links are cut into two parts and joined after the introduction of the whole links by means of cement, pins, &c. The chain may be left of the natural colour of the wood or be japanned or otherwise ornamented.

[Printed, 4*d*. No Drawings.]

A.D. 1855, March 12.—No. 551.

MOSLEY, GEORGE.— (*Provisional protection only.*)—"An "improvement in buttons." The shank is made of an elastic material, by preference of "india-rubber covered with silk or "other fibrous substance." Short pieces of the material are passed through a hole in the middle of the body of the button and cemented therein. A stud or bead, cemented into the hole on the upper or outside of the body, closes and conceals the hole.

[Printed, 4*d*. No Drawings.]

A.D. 1855, March 19.—No. 612.

CHARTRAIRE, FELIX ALEXIS. — (*Provisional protection only.*)—"A new apparatus for fastening gloves, collars, shirts, "and other similar articles." The inventor proposes to replace "the button and draw fastenings now in use" by an apparatus composed of the four following parts :—(1) a hook "clinched to the glove by means of two turned claws ;" (2) a circular plate "set round the hook," the middle serving to "receive the head of the hook, which fits it exactly ;" this plate is attached to a caoutchouc loop "by means of a tag "bent beneath ;" (3) "a double plate, of which one part serves "as an eyelet for the passage of the loop, and the other part "overhanging the eyelet hides it and represents the button ;" the eyelet is fastened by means of two clinches "lapped on "each side underneath and under the skin of the glove ;" (4) a caoutchouc loop, having one end "attached under the rivet "of the hook," the other to the circular plate.

In drawing the circular plate, the loop "is caused to spring "out," and "the two sides of the glove are brought together "of themselves." The plate "is then set under its hook," and the glove is fastened.

[Printed, 6*d*. Drawing.]

A.D. 1855, March 30.—No. 714.

NEALE, Edward Vansittart, and DAWSON, Thomas.— "Improvements in handles and parts of handles for umbrellas, "walking sticks, knives, and for other like articles, and for "articles of furniture in stoppers, finger-plates, medallions, "jewellery, furniture, and other decorative articles." All these articles are made of glass "blown or cast into suitable "shapes," and decorated on the inner or under surface with "any pattern, figure, or device required." The glass (if required) is filled with fine sand or cement or "other substance "capable of giving strength and support thereto."

No particular articles of jewellery are specified; the Specification describes various modes of making and decorating handles and knobs.

[Printed, 4*d*. No Drawings.]

A.D. 1855, April 19.—No. 875.

JOHNSON, John Henry.—(*A communication.*)—"Improvements in the manufacture of articles of hard india-rubber or "gutta percha or compounds thereof, and in coating or covering articles with the like materials." Among the articles affected by this invention are buttons and cockades, but no particular description is given for their manufacture.

The articles mentioned in the Specification are moulded while in a plastic state and submitted to a high degree of heat in steam heaters or to the action of a sulphur bath, when in the mould or when removed therefrom. The caoutchouc or gutta percha may "be incorporated with sulphur before "moulding," or "the pure gums may be dissolved in spirits "or carburet of sulphur, and the moulds filled with the solution," or "pure gums may be used and submitted while in "the moulds to the sulphur bath." In other cases "the "material may be vulcanized in sheets or other forms."

Reference is made to Specifications of Letters Patent previously granted to Thomas Hancock, Charles Hancock, William Brockedon, and Thomas Hancock, William Johnson, and to the patentee himself.

[Printed, 4*d*. No Drawings.]

A.D. 1855, April 21.—No. 901.

WALSH, SAMUEL, and BRIERLEY, JOHN HENRY.—" A clasp " or fastener for belts, bands, or straps, or for certain improve" ments contained therein." This clasp is composed of two plates. One plate has attached to it "a bar with a projecting " point or hook in the centre ;" or the hook is attached to the plate, "a portion of which is cut away to allow the insertion of " the material of the belt ;" this plate is pierced with a T-shaped slot ; the material has a row of holes punched in it, and the length of the belt is adjusted "by slipping the hook " through one of the holes.

The other plate has two round holes pierced through it, and the fixed end of the belt is attached thereto by eyelets. On this plate is "a raised part," which takes into the slot in the other plate and thereby unites the two.

The slot "is covered or faced on one side with a plate of " glass, metal, or other material of any design."

[Printed, 8*d*. Drawings.]

A.D. 1855, April 23.—No. 909.

ILIFFE, HENRY JEREMIAH, and NEWMAN, JAMES.—" Im" provements in the manufacture of covered buttons." The buttons to which this invention applies are of the description known as "the linen covered button, having also a linen " covered back, either with or without a metallic eyelet or " collet and a metal bar at the back or front." The button may be covered with other fabric than linen.

The upper shell has the centre struck up and the parts turned over "to form a round bar ;" the outer edge also is turned up. The back shell is perforated in the centre ; the edge of the perforation is turned up to form a collet "which " clips the covering fabric." A covering is laid over the face of the upper shell and brought over the edge. The back shell with its covering is placed in the upper shell, and the whole is united "by pressing down the edges " of the upper shell on to the under shell.

Modifications :—A piece of fabric may be used instead of a bar between two covered shells, "both having the metal collet " or eyelet in the centre." Perforated shells may be used

" without eyelets, and both shells may be covered with fabric so that no metal is visible. A single shell button may be made by placing in the back of a shell "a piece of linen with " a thin ring over it to keep it down," and then pressing down the edge of the shell tightly on the ring.

[Printed, 4d. Woodcuts.]

A.D. 1855, May 7.—No. 1019.

JOHNSON, John Henry.—(*A communication from Eugene Bourdon.*)—"Improvements in hair and other pins used as " dress or ornament fastenings." The stems (or a portion of the stems) of these pins, whether intended for hair pins, brooch pins, or dress-securing pins, are bent "into an undulating " form," or are made straight and have "a series of irregular " undulating projections formed round the sides thereof." Some stems are made with "a number of projecting knobs" on their surface. The undulations or projections may be made on the wire before its manufacture into pins, or during or after the manufacture.

"Any suitable mechanical contrivance" and wire "of any " desired section" may be used. The inventor makes use of suitably "undulated dies and matrices," so that by aid of pressure he can make single stems, or double stems united by a bend, or double stems, one of which is straight and the other undulated.

[Printed, 6*d.* Drawing.]

A.D. 1855, May 11.—No. 1061.

BROUGH, Nehemiah.—(*Complete Specification but no Letters Patent.*)—"Improvements in slide buckles," applicable to braces, belts, and girths. A face plate is stamped out into a nearly rectangular shape; it is made on each side with a lug " turned round inwards," and having a hole sunk in it. An under plate carries a pin on each side; it has one edge "hol- " lowed out" to allow of "the free passage of the web or " other material of which the brace or belt is made." The web when in a state of tension is pinched between the edges of the plates. The brace ends are fixed to the lower plate, and the pins "are then sprung into the holes" of the lugs, thereby connecting the two plates.

Modifications :—The under plate is made with "a parallel "bar running its entire length;" one edge of the bar is "slightly sunk or chamfered in the press," and the web is pinched "between the edge of the face plate" and "the corresponding edge of the bar." Or a slot is cut through the under plate, and the web "is pressed into the slot by the "projecting flange on the face plate."

[Printed, 6*d*. Drawing.]

A.D. 1855, May 21.—No. 1130.

NICHOLLS, Benjamin.—"Improvements in the manufacture "and construction of buttons." These buttons are made of gutta percha or of a combination thereof with other substances which possess the property of "sufficient plasticity for forming "and moulding when under the action of moderate heat, "and the requisite hardness and pliability when under the "ordinary temperature to which buttons are submitted when "in use."

The buttons are made in one piece with their shanks; the shapes and the modes of attaching them to garments are various; the ways in which they are formed are also various, "but generally peformed by the action of a powerful press, "the gutta percha being compressed into a number of cups or "moulds, which pressing it against another surface cut out "the buttons completely formed."

The patentee describes a press which he proposes to use.

[Printed, 4*d*. Woodcuts.]

A.D. 1855, May 26.—No. 1197.

PARENT, Alfred Isidore Honoré.—(*Provisional protection only.*)—"Improvements in manufacturing buttons, nails, "and metallic and plastic articles." These articles are shaped "by drawing under pressure." A blank is cut out in metal or in a plastic substance (as the case may be) of the weight of the article to be produced; it is placed in a mould "to rough-"shape" it, and then in another "to form it into its finished "shape." The latter mould with the blank in it is subjected to strong pressure, "drawn out under pressure, and made to "assume the internal configuration of the mould." The shank in buttons is afterwards pierced by a punch or otherwise.

[Printed, 4*d*. No Drawings.]

A.D. 1855, June 2.—No. 1266.

DORE, JAMES TAYLOR.—(*Provisional protection only.*)—"An improved mode of constructing boxes or cases for holding needles, buttons, and other wares." The boxes or cases are made with a moveable false bottom, whereon packets of the articles can be laid one above the other. Under the false bottom is a spring which forces up the false bottom and with it the packets. The upper part of the box or case is open, and the packets "are forced up against rebates at the sides." Instead of using a spring the false bottom may be fitted in such a manner "that it may be pushed up by means of the "finger from beneath."

[Printed, 4*d*. No Drawings.]

A.D. 1855, June 26.—No. 1464.

CLEMENTS, JAMES MOORE.—(*Provisional protection only.*)—"Improvements in pockets with spring lock fastening "applicable to male and female attire, as also a fastening for "bags, reticules, purses, or similar articles." The mouth of the pocket is a frame of steel or other suitable metal covered with the material of which the pocket is made. "A suitable "spring catch" is secured in or about the middle of the frame. If the pocket is to be worn outside a lady's dress, it is made of links or rings and in the form of a purse; the frame is ornamented, and lock pins are used to secure the pocket to the dress.

Sometimes pockets made of woven fabric have threads of wire introduced into the fabric to give additional strength and to render them "less liable to be cut for the purposes of "theft."

[Printed, 4*d*. No Drawings.]

A.D. 1855, July 31.—No. 1735.

BROUGH, NEHEMIAH.—"Improvements in the manufacture "of clasps and buckles" for belts, bands, and other similar purposes. The two parts of the clasp are stamped or struck out into the shape shown in the annexed sheet of drawings, each having a bar for the attachment of one end of the belt. One part has a round opening and a hook or tongue piece, the other a round piece ("which forms the centre of the clasp") and an aperture "in a corresponding position" to the hook. The centre piece "has also a small flange or fin struck out of "the metal at the same time." The hook "is turned back "slightly from the line of the front of the clasp"; this admits of the hook taking into the aperture when the parts are combined, while the flange prevents the centre piece from passing through the round opening. The parts are readily united and as readily disunited "by the same motion as disengaging "an ordinary hook and eye."

The improvement in the buckle consists in "stamping it out "of sheet metal into the requisite form and at the same time "stamping out the tongue." Double buckles with more than one loop and single or double buckles with one or more fixed tongue pieces are produced in the same manner.

[Printed, 6*d*. Drawing.]

A.D. 1855, September 1.—No. 1974.

JOB, Alfred Mortimer, and TOMLINSON, Edwin.—(*Provisional protection only.*)—"A new article to be called "'India-rubber Leather Cloth,' applicable to covering roofs, "floors, trunks, and for other similar purposes." The inventors state that they apply this cloth also to coverings for buttons.

The cloth is made by combining particles of leather (either ground or cut up) with masticated caoutchouc or gutta percha, or both. Metal dust or filings may be used instead of particles of leather. The caoutchouc or gutta percha is prepared with any of the well-known solvents, and the combination is "effected by means of mastication or roller pressure." The new material may be printed and coloured.

[Printed, 4*d*. No Drawings.]

A.D. 1855, September 8.—No. 2031.

RASCOL, Eugene Hippolyte. — (*A communication.*) — "An improved fastening for articles of wearing apparel and "for other purposes as a substitute for buttons." This fastening is a stud formed of tough and elastic wood or of metal. One head or end is smaller than the other; it is "rounded and "otherwise adapted" for entering an eyelet hole. This rounded head "has two cross saw cuts or slits otherwise "formed in it, which pass down the neck of the stud and "descend as far as the larger head," allowing the four parts to be compressed. The eyelet holes which are made in the parts to be fastened together are smaller than the rounded head in its ordinary state. The head is compressed when being passed through the holes and expands when passed through.

The component parts of the stud admit of variation; the larger head may be of metal, the stem and rounded head of wood or of different metal.

[Printed, 6*d*. Drawing.]

A.D. 1855, September 25.—No. 2137.

GARDNER, John Laurence. — (*Provisional protection only.*)—"Improvements in the manufacture, form, and mode "of attaching buttons." The shank of this button is "a "short, thin, cylindrical, or partly conical, hollow metal tube," flanged at one end and plain at the other. The shank is fixed by any suitable means at the flanged end to the under side of the button head.

In order to attach the button to a fabric, the fabric is perforated; the plain end of the shank is passed through the hole; a ring is put round this end; pressure is applied, and the end is distended over the edge of the ring.

[Printed, 4*d*. No Drawings.]

A.D. 1855, October 4.—No. 2215.

CORNFORTH, Henry.—"A new or improved manufacture of "hooks and eyes." These articles are made of iron or steel wire, and the improvement consists in coating them first with copper or brass and afterwards with silver.

The coating with copper is effected by means of "a solution "of cyanide of copper" used by preference at a boiling or nearly boiling heat; the solution is used "in conjunction with "an electrical current."

The coating with silver is effected by immersing the copper coated articles "in a solution of cyanide of silver, either with "or without the application of an electrical current," according to the thickness of coating required.

Before the articles are coated with copper, they should be cleaned "by immersion in dilute sulphuric or hydrochloric

" acid, or otherwise." When an electric current is employed, it is preferred to place the articles in a revolving metal cage or case, or in a metallic sieve, or to thread them on a wire; the cage, sieve, or wire must be immersed in the solution.

A deposit of brass or zinc "answers as well or nearly so as " copper." Other solutions may be used. The silver may be applied "without an intermediate layer."

[Printed, 4*d*. No Drawings.]

A.D. 1855, October 4.—No. 2216.

RYLAND, THOMAS HENRY.—"A new or improved manufac- " ture of bracelets and other dress ornaments, and ornamental " dress fastenings." This invention relates to beads, droppers of ear-rings, ornamental parts of brooches, "and dress fas- " tenings generally." The patentee makes the parts of such ornaments and fastenings as are usually made of jet of horn or hoof, or "such other animal substances as are usually " employed in the manufacture of articles commonly called " horn."

He stains the horn black or dyes it of any desired colour, then softens it by heat and presses it in dies to the required form. When the articles are polished, they closely resemble jet if the horn has been stained black; they may be made to resemble tortoiseshell or other substance "by being stained " of other suitable colour."

[Printed, 4*d*. No Drawings.]

A.D. 1855, October 5.—No. 2232.

LEPAGE, FRANÇOIS CHARLES.—"A new composition or new " compositions of materials which may be employed as a sub- " stitute for wood, leather, bone, metal, and other hard or " plastic substances, and the method of manufacturing the " same." This composition (a combination of sawdust and albumen) is applicable to a variety of articles, amongst which the patentee mentions " brooches and other articles of " jewellery."

The sawdust may be used alone or mixed with "vegetable, " mineral, or metallic powders." The albumen may be mixed with " any other glutinous substance;" or instead of albumen, gelatine or size or albuminous salts may be used. Colouring matters may be added.

The sawdust (alone or mixed) is soaked in "pure albumen "slightly diluted and liquefied by water or otherwise;" it is then well dried and pressed. The substance is then put into moulds, (by preference of steel) in such quantity that it may exactly fill each mould, "neither more or less;" the moulds whilst under pressure are kept heated "by a steam jacket" or other means, and as soon as the moulding is completed, they are suddenly cooled by plunging them into cold water or by pouring cold water over them. The articles may be ornamented by engraving the inner surface of the moulds.

[Printed, 6*d*. Drawing.]

A.D. 1855, October 20.—No. 2356.

GAUDIBERT, HYPOLYTE.—(*Letters Patent void for want of Final Specification.*)—"An improved construction of guards "for preventing surreptitious removal of watches, purses, "pocket books, and other articles from the person." The article to be protected is attached temporarily to the lining of the pocket by means of a chain, to one end of which is connected "a spring loop or suspender" and to the other end "a sharp pointed hook or its equivalent." The hook enters the fabric of the pocket; the article is attached to the spring loop; and "the ordinary watch guard" is connected "to the "ring which connects the short chain with the sharp pointed "hook." A purse requires to be "simply hooked on to the "spring loop."

[Printed, 4*d*. No Drawings.]

A.D. 1855, October 22.—No. 2359.

PARKES, ALEXANDER.—"Preparations of oils for and solu"tions used when waterproofing, and for the manufacture of "various articles by the use of such compounds." The second part of this invention relates to the use of solutions of gun cotton or other similar compounds. "The method of dis"solving being well known," the patentee does not state any proportions, the quantity of solvent depending on the stiffness of the required solution. Gums or resins, colouring agents or metallic bronzes, stearine, india-rubber, gutta percha, and other substances, may be mixed with the solutions.

The solutions may be spread upon fabrics; or sheets may be formed by laying coating upon coating until the desired thickness is obtained; or compound sheets may be made by cementing together alternately a sheet of fabric and a sheet of collodion. Sheets so made, but especially sheets consisting of layers of solution, are "suitable for book-binding, button "manufacture, and other applications where a hard, strong, "brilliant material is required."

[Printed, 4*d*. No Drawings.]

A.D. 1855, November 7.—No. 2510.

GODDING, Thomas.—"Improvements in the fastening for "stays, corsets, and bands." A busk is attached to each side of the stays." In the under busk are secured "moveable or "revolving hooks or metal fastenings" (one or more) which "will turn partly or completely round," the hook or fastening part being "toward the outside of the busk." The hooks or fastenings when fastened are usually "at the back of the "upper busk," but they may be used "with eyelets in front "of the same; or eyelet or other kind of holes may be made "in the stays or busk."

The stays are fastened "by wrapping the upper busk over "or against the lower busk, and introducing the top part of "the hook into the hole or holes;" the hooks are then turned round.

[Printed, 4*d*. No Drawings.]

A.D. 1855, November 8.—No. 2516.

CARTER, William.—(*A communication.*)—(*Provisional protection not allowed.*)—"An improved construction of "safety pocket." This pocket, which may be called "a "double pocket," is a bag with a partition "intermediate "between the mouth and the bottom." The partition is of flexible material and has an opening in the middle which is partially closed by a vulcanized india-rubber or metal spring.

Sometimes the partition is omitted, and the expanding part is applied at the mouth of the pocket.

[Printed, 4*d*. No Drawings.]

A.D. 1855, December 22.—No. 2901.

NEWMAN, James, and **WHITTLE**, William.—"Improve-"ments in the manufacture of hooks and eyes, and in the "machinery to be employed in the manufacture of the hooks "aforesaid." The material of which the hooks are made is "iron or other wire" coated "with brass or other metal" by the "drawing process." The machinery, carried by a bed (supported on legs) and two standards, is so constructed "that "the working parts are easy of access," so that the workman "can readily change and adjust the various tools and working "parts." The main shaft turning in bearings in the standards carries several cams which communicate motion to five vertically sliding bolts, to "side-closing levers," to a "grip "lever," and to a "feeding lever" which "turns upon two "centres," one "in a vertical plane parallel to the plane" in which the standards are situated, the other "in a vertical plane "perpendicular to the former."

The various parts will be mentioned in describing the action of the machine:—The wire, "after passing through a straight-"ening apparatus, such as is commonly employed," is conducted horizontally into the machine; it passes under a "grip tool," thence under the grip lever, and through a "guide box" to the "working tools." The feed lever turns upon the second-mentioned centre and thereby presses the grip lever against a "feeding slide," so that the wire is gripped between the grip tool and the slide; it then turns on the other centre and communicates motion to the slide which takes the wire with it "towards the centre of the machine." To prevent the wire from being withdrawn on the return of the slide, the grip lever presses upon the wire and holds it firm against a plate on the bed "while the feeder makes its return motion." The wire is cut off by a cutter which "bears against the "hardened end of the guide box" and forms therewith a kind of shears. A "centre peg" descending forces the wire down between "needle-hole pegs," thereby doubling the wire at its middle. The ends of the wire being horizontal by being engaged under "needle-hole closers," the closers next descend and turn down the ends over the outer sides of the pegs. The side closers now advance towards each other, press the extreme ends underneath the pegs, and complete the needle-holes of the hook. The centre peg now rises, the side closers approach nearer to each other, and bring the parallel limbs of the hook into close contact. The bending or beaking of the hook is effected by a "beaking plate," which "advances horizontally "at the same time that the needle-hole pegs are withdrawn;" this plate enters an opening carrying the blank with it, and the blank in passing through "is doubled near its middle." A "planishing slide," advancing horizontally, "rubs along "the beak of the hook," and then retires; the beaking plate is withdrawn, and "the finished hook falls from the machine."

The beak is either fluted or ornamented by giving a fluted form to the planishing slide or by substituting for it a milling tool.

Metallic eyes are made in the shape of the letter D; in order to prevent the slipping of the thread, either "transverse "grooves or lines" are cut on the straight portion, or a projection is made at or near the middle thereof.

[Printed, 1*s*. Drawings.]

A.D. 1855, December 28.—No. 2941.

TURNER, John Pemberton.—(*A communication.*)—(*Provisional protection only.*)—"A new or improved method of "shanking metallic buttons, applicable to the heading of nails "and other like purposes." The blank to form the head of the button is cut out in such manner as to leave a depression in the middle. The blank is then subjected to the action of a stamp, whereby the depression is deepened, the metal "being "pressed towards the centre and raised into an annular form "around the said depression." The shank being inserted in the depression, the blank is again subjected to the action of a stamp, whereby the metal near the centre is closed upon the shank, "and the latter becomes firmly attached to the button." The design on the face of the button "is produced at the "same time by the action of the stamp."

[Printed, 4*d*. No Drawings.]

1856.

A.D. 1856, January 5.—No. 49.

THÉRÈSE, Louis Auguste.—(*Provisional protection only.*)—"Improvements in harness." Amongst his improvements the inventor mentions "a new form of buckle." The frame is of any desired shape, and "fixed studs" are substituted for the ordinary moveable tongue or tongues. The studs are to be made (by preference) "of brass or of some other metal "which will not readily oxydize."

[Printed, 4*d*. No Drawings.]

A.D. 1856, February 21.—No. 449.

CHATWIN, Thomas Turner, and CHATWIN, John Frederick. — (*Provisional protection only.*) — "Improvements in buttons." The first improvement consists in applying discs of mother-of-pearl or other shell as centres to the faces of buttons partly covered with silk or other fabric.

The second, in using an elastic material in the interior of buttons; the central part of the metal shell is cut away; the elastic material "is made to protrude through the shell," and the whole is covered "with the outer fabric of the button."

The third, in making flexible shank buttons without the usual packing of paper; the disc forming the back is made flat; it fits closely against the front shell and grasps the shank tightly between it and the shell.

The fourth, in ornamenting metal sewn-through buttons by perforating them "with a series of perforations in addition to "those constituting the holes by which the button is attached "to the garment."

[Printed, 4*d*. No Drawings.]

A.D. 1856, February 28.—No. 507.

THOMPSON, William, and WILSON, Charles. — (*Provisional protection only.*)—"Improvements in buttons and in "attaching the same to articles of dress." The buttons, whether of metal or covered, are made with shanks "having "the form of an open tube."

The mode of attachment is by passing the shank through a hole in the article of dress, putting a washer on the outer end of the shank, and opening or spreading out the shank. The material is "grasped between the back of the button and the "washer on the shank."

[Printed, 4*d*. No Drawings.]

A.D. 1856, March 1.—No. 528.

READING, John.—"New or improved fastenings for attaching watch keys, seals, watches, lockets, articles of jewellery, "and ornamental articles of dress in general to chains, and "for securing the catches of brooches." The fastening first described consists of two plates of metal hinged together at one end. A bolt or snap urged forward by a coiled spring works in a slot in one plate, "the motion of the said bolt "being in the plane of the plate." A hook with an inclined end is fixed to the lower end of the other plate, and when the first plate is pressed against the hook, the end of the bolt "engages behind the said hook." To disengage the bolt a pin or stud thereon "is pressed towards the joint." Two projections are fixed on the other plate on its inner side; the one "arrests the motion" of the first or moveable plate; the other "has for its object the separation of the parallel parts "of a loop of a chain on which the fastening may be placed." The chain is introduced between the plates, and the article to be attached to the chain is hung on the hook. Sometimes a loop is attached to the inside of "the fixed plate;" sometimes a loop or swivel is fixed to the upper end of the fastening.

The second is to be used "in place of the ordinary split "ring:"—The ring is divided; "the opposed ends" have a shape represented in the annexed sheet of drawings. On the ring is a small ring carrying a piece, the shape of which also is shown in the sheet of drawings. When keys, &c. are placed on the ring through the division, the small ring and piece are brought over the division, and "are pulled in the direction of "a radius from the centre" when the piece engages with the "ends of the ring." The piece escapes from the ends by pushing the small ring "towards the centre" of the larger one.

The third is a contrivance for securing the pins of brooches: —A bolt, sliding in a case and urged by a spring, carries a tongue whose inclined end bears against the inclined face of a hook, "under which the pin of the brooch engages." The pin "which is external to the hook" is pressed against the tongue, when the bolt "is carried into the case," and the pin enters the hook. The pin is released by pressing the end of the bolt.

[Printed, 6*d*. Drawing.]

A.D. 1856, March 6.—No. 568.

SCOTT, John William.—"An apparatus for fastening or securing buttons, which may itself be used as a stud or button." The apparatus consists of two parts, namely a metal staple " formed with a head at each end and made flat under the " heads," and a disc "formed with two slots at the sides leading " into sunken parts or recesses for receiving the heads of the " staple." The heads when forced into the recesses lie flush " or nearly so with the upper surface of the disc." Or an aperture may be made in the disc, and both ends of the staple may be forced into it and be held "by springing out from each " other or by the heads hooking on to the disc."

The patentee describes the method of using his apparatus to secure a shanked button to a boot:—The staple is passed through the shank and through "two holes pierced in the side " of the boot to the reverse side of the leather;" one of the heads is thrust through one slot into its recess; the disc is placed flat on the leather; and the other head is forced into the other slot and recess.

A button may be secured on two sides of a fabric by using two discs with slots, and recesses and "two separate metal " pins formed flat near each end and with two heads." The plates themselves "may be used as studs or buttons."

Another modification is described in which "the staple is " applied to the plate in the form of a closed shank" having " a head or neck."

[Printed, 4*d*. Woodcuts.]

A.D. 1856, April 17.—No. 920.

WRIGHT, John Skirrow.—"Improvements in the construction and ornamentation of belt or band fastenings." First improvement; making the central piece or ornament reversible ;

—The outer or annular part is made of either solid metal or two shells riveted together; the central piece is pin-jointed to the outer part, so that it "may be turned so as to present " either of its faces outwards."

Second improvement; making the outer or annular part or the side pieces reversible:—One side piece is made with a button and a neck which drops into a collar on one side of the outer part and constitutes a swivel joint. The other side piece, besides turning in the outer part, "is made to engage " therewith and disengage therefrom," so as to effect the fastening or unfastening of the belt or band by means of a cross piece "which enters a slit in the edge" of the outer part.

Third improvement; preventing "the gaping which the " ordinary belt fastening exhibits:"—The ring part is made with two tongues projecting inwards; when the hook part is introduced, its disc "engages under the tongues" and has " less tendency to rise out of the plane of the ring."

Or the hook part is made with a neck and revolving cross piece thereon; the ring part with a sunk centre and a slot for the admission of the cross piece. "The mobility of the said " cross piece" causes it "to lie flat on the centre" when the two parts of the fastening "are not in the same plane." The cross piece "is reversible."

Or a bar is fixed "across the eye," and a staple "to the " under side of the hook;" the staple "is made to engage " with the bar."

The fourth improvement consists in ornamenting the fastenings with "papier maché, leather, textile fabrics, coloured or " enamelled, tin plate, zinc, or tinned zinc, and galvanic de- " posits;" these may be applied "in any convenient manner," and the patentee describes the method which he prefers.

[Printed, 8*d*. Drawing.]

A.D. 1856, April 21.—No. 951.

OWEN, WILLIAM.—(*Provisional protection only.*)—"Im- " provements in the modes of attaching buttons to wearing " apparel." First mode:—The button is made with "two or " more shanks of wire;" these are passed through the fabric to which the button is to be fastened, then through a washer, and finally spread outwards and pressed down against the washer.

Second mode :—A tube is formed on the back of the button; when passed through the fabric and washer it is bent or turned down over the washer.

Third mode :—A tube is formed with or attached to a washer; it is passed through the fabric and into a hole in the centre of the back of the button. Inside the button is "a cone-shaped " piece of metal, on to the apex of which the end of the tube " is pressed and is expanded."

[Printed, 4*d.* No Drawings.]

A.D. 1856, May 21.—No. 1202.

COPE, John.—" Improvements in the manufacture of buttons " made of pearl or other shell, ivory, bone, or wood." The buttons may be made with either a flexible or a metal shank.

To make a button with a flexible shank two discs are used; the front one is let into the back one, and the back one is perforated through the middle. A piece of fabric, made with " a cup-like depression," is placed between the discs and cemented in; the portion which protrudes through the perforation constitutes the shank. If the button is to be a sewn-through button, both discs are perforated, so that the needle " may pass through the button and the fabric in its interior." The perforation in the front disc is conical and smaller than that in the back disc. Sometimes the back disc is of metal " covered at the back and edge with a fabric."

If the shank is to be of metal, one disc only is required; a groove is turned in the back; "a dome-like shank" is placed in the groove, forced into it by means of a press and pressing tools, and then perforated at opposite sides. A similar shank may be made of wood, ivory, or other non-metallic substance.

The shape of the button may be varied.

[Printed, 6*d.* Drawing.]

A.D. 1856, June 30.—No. 1532.

NEWTON, Alfred Vincent.—(*A communication.*)—(*Provisional protection only.*)—" An improved safety pocket for " coats and other garments." The pocket is made of brass rings or links and is closed at top by a clasp "very much like " the ordinary clasp for purses." The clasp is fastened by a spring lock, and a catch shuts over the key-hole. When the clasp is unlocked, it "is thrown open by a flat spring contained " between the jaws."

The pocket is inserted in such a manner that it "cannot " be detached by any means ordinarily available by pick- " pockets."

[Printed, 4*d*. No Drawings.]

A.D, 1856, July 2.—No. 1554.

GREEN, Edwin. — "Improvements in the manufacture of " buttons." Three improvements are claimed. The first relates to the construction of flexible shank buttons, the foundation of which is of metal wholly or partially covered with a woven fabric :—The shank is held firmly between two flanges, one formed on the front, the other on the back shell of the button, each in the middle of the button.

The second, to the construction of buttons with a metallic bar or shank "formed of the front or back shell :"—One shell is pierced with a circular hole through the middle ; the other has "two or more portions of circles pierced out, thus forming " a bar or cross in the centre of the hole." Or two or more holes are pierced through one of the shells. This button is covered with linen or other woven fabric. Sometimes the middle of the covering fabric for the back is perforated, and through the perforation a flange formed on the back shell is passed and turned down over the fabric so as to make an eyelet hole. Sometimes the front and back shells form an eyelet hole, and a bar of wire to constitute a shank is inserted between the shells.

In one figure in the annexed sheet of drawings a loop is inserted into the back shell of a button to form "a fastening " for umbrellas and other articles."

In the buttons constructed in accordance with the foregoing improvements, the patentee dispenses with paper or other soft material for filling the interior.

The third, to the formation of metal buttons :—The front and back shells are pierced "with two, three, or four holes " corresponding with each other and near the centre," and forming "tubular" and "continuous holes" through the buttons. Both shells are embossed or recessed "concentric " with the button itself ;" or the holes "may be embossed or " indented at a little distance around and concentric with the "holes themselves." Where the shells are pierced with two holes, they are embossed or indented "in an oval form "embracing the two holes."

[Printed, 8*d*. Drawing.]

A.D. 1856, July 7.—No. 1584.

PILLINER, Frederic James.—(*Provisional protection only.*)—"Improvements in clasps or fastenings for waistbands "and other descriptions of bands or straps." One part called the mount is of the ordinary kind and secured to one end of the band by a metal loop; the opposite end of the mount has "a socket with a longitudinal groove or slit opening there-"into." The socket and groove are "in the direction of the "breadth of the band." To the other end of the band is attached "a rectangular metal hoop or loop," which slides into the socket; "the ends of the loop are received into two "notches cut in the socket at each end of the slit;" this is effected "by turning the part within the socket a little on its "axis." The slot is so cut that the strain on the band tends to keep the parts of the loop within the notches and to prevent the fastening from being disconnected.

The mount "may be fitted with one of these fastenings at "either end," so that the same mount may be worn "with "different bands," or the fastening be worn "without any "ornamental part." Instead of the two ends of the loop being received into two notches, "this part may be like the "letter H, having one arm in the middle of its length and "received in one notch in the middle of the length of the "socket."

[Printed, 4*d*. No Drawings.]

A.D. 1856, July 9.—No. 1622.

JEROME, Timothy.—"Improvements in buttons for orna-"menting and fastening dresses, and also in loops for attach-"ing or holding buttons on garments while in use." The patentee renders buttons used for ladies' dresses and gentlemen's coats ornamental by setting a jewelled, pearl, ivory, &c. centre in the front shell which is covered with a woven fabric. These buttons are usually made with "an ordinary metal disc "at the back and tuft or flexible shank;" but they are capable "of being greatly diversified both in shape and character as

" well as in the mode of connecting the parts together, and " also in the manner in which they may be applied to gar- " ments." Several modifications are described in the Specification.

In "vest buttons" he uses an ornamental front "set in a " shell covered on the edge with a woven fabric;" the shank may be either flexible or of metal. Sometimes he perforates the front with a hole or holes so that the buttons may be attached to the garment "by being sewn through from the " front."

He improves "shirt or linen buttons" by placing a wire bar " across the shank hole or openings in the shell and disc at the " back of the button for the thread by which the button is " attached to ride on."

His trouser buttons consist of a front and back shell so formed that when they are put together "a round fullness is " given to the part that surrounds the holes through which " the thread passes," and a shoulder or neck is formed at the back "for the garment to ride on."

His metallic loops for attaching buttons to garments which require washing are cut from sheet metal; they are so shaped " that a bar is provided for passing through the eye or shank " of the button where it is retained by a spring catch." Sometimes the loops are shaped like an S or an 8 "with an " indentation in the middle for the shank of the button to " ride on."

[Printed, 8*d*. Drawing.]

A.D. 1856, July 19.—No. 1713.

ILIFFE, Henry Jeremiah and NEWMAN, James.—(*Provisional protection only.*)—"Improvements in the manufac- " ture of buttons." Brace buttons are made by striking out a blank perforated with one or more needle holes and having the outer edge turned up all round; by stamping out of sheet metal or forming in wire "a skeleton piece" having as many loops as there are holes in the blank; by flattening the head of each loop (if necessary) "to form a small fin;" and by securing the skeleton piece in the blank "by pressing down " the raised outer edge of the blank upon these fins."

Covered buttons are made by stamping out a shell "with a " double-grooved or flanged edge" and either with or without

" a bar or bars across the needle hole in the centre," and by securing a disc of linen on each side of the shell by clipping it in the groove or flange on its side. This method gives a " rim " of metal round the back of the button;" if the button is to be covered entirely at back and front, one piece of linen is used sufficiently large "to cover one side of the button and " pass over the edge into the flange on the opposite side of " the blank." In making Florentine buttons on this plan the tuft piece for the shank has to be added.

The shapes of the skeleton pieces and of the blank used for the covered buttons are shown in woodcuts in the Specification.

[Printed, 4*d*. Woodcuts.]

A.D. 1856, July 23.—No. 1739.

NORTH, GEORGE.—"An improved spring catch for the security of jewellery and articles of personal ornament and " general utility." This invention will be found to be "a " convenient and secure lock for brooches, head ornaments, " and other articles of jewellery, bags, purses, parts of wearing apparel," &c.

When the article is intended to form a "double catch bolt," it is composed of (1) a tube partially closed at one end, having two "transverse openings" with a longitudinal slot connected to each for the guidance of the catches, and a "narrow trans- " verse opening" for the insertion of a stop which prevents the spring from moving too far; (2) a bolt inside the tube, carrying two catches with fronts "forming inclined planes," and a coiled spring either between the catches or between one of the catches and a knob at the end of the bolt. The catches when pressed will "admit the pins, loops, or what they may " be arranged to fasten, immediately under the catches into " the spaces formed by the transverse openings." Sometimes the catches are "curved and moving within the tube" instead of projecting beyond its external surface.

The article is sometimes made with only one catch on the bolt and only one transverse opening in the tube, the opening " forming a stop to prevent the accidental escape of what may " be passed under the catch."

The invention admits of modifications :—In one, a single catch is placed at one end of the bolt; the catch projects beyond the end of the tube "for the purpose of having a loop "formed thereon," an arrangement "available for securing "the tongues of brooches, &c." In another "the tube and "spiral spring are dispensed with," a catch formed or affixed on one end of a spring and a stop fixed to the other end of the spring being the only parts employed.

[Printed, 8*d*. Drawing.]

A.D. 1856, July 23.—No. 1741.

POTTS, FERDINAND.—"Improvements in tags for stay and "other laces, as also in the machinery for forming and finishing the same." The machine employed is by preference a press patented by "Henry Knight of Birmingham on the 7th of "June, 1849," fitted with (1) "a bolster" held by set pins on the bed; (2) a "bed tool" secured to the bolster; (3) a "top "tool" pinned to the guide rod. The tags are applied to the lace "in double lengths" by preference, and the lace is wound upon reels.

The metal for the tag is cut out "by suitable tools;" one edge of the metal "is slightly curved," and the curved part rests "in a corresponding curved or semicircular groove" in the bed tool. "The lace is conducted through a guide hole "which makes it tight and round for receiving the tag;" it is then placed in the curved portion of the metal, and if the blank is long enough to make two tags, the two ends of a sufficiently long lace are placed therein end to end; the top tool descends, and the tag blank takes "the circular form of the "groove in the bed tool, coiling round like a scroll, holding "the lace in its centre."

If the bed tool is made with a groove on each side, four tags may be formed and secured to laces at each descent of the top tool.

In order to further secure the tag on the lace and at the same time to divide the double tag, "indented grooves" are formed round them, and the middle groove is made larger and deeper than the rest to facilitate the division. "These circular "grooves may be formed in various ways," and the patentee describes the required additions, &c., "that they may be "formed by the same description of tools and press as herein-"before described."

[Printed, 8*d*. Drawing.]

A.D. 1856, July 29.—No. 1791.

GRIFFIN, William and **DULEY**, Elizabeth.—"Improve-"ments in studs and buttons for fastening articles of dress." The first improvement consists in making studs and buttons with a neck, a shoulder to bear against the fabric, and a screwed pin which is pushed through the fabric and secured by a nut.

The second relates to ordinary shank buttons :—A metal loop is secured in the eye of the shank; the tail of the loop is screwed, passed through the fabric, and fastened by a nut. Or a hook with a screwed tail is passed into the eye; "the point "of the hook is drawn back within the eyelet hole in the fabric "or article to which it is attached by the screw nut." This improved method of fastening is applicable to flexible shanks.

The third refers to covered buttons and consists "in the "application of a flexible loop thereto;" the loop is attached by means of the metal shell, through which in ordinary buttons the tuft to be sewn to the garment projects.

[Printed, 6*d*. Drawing.]

A.D. 1856, August, 7.—No. 1861.

GOLL, Alexandre Theodore Nicolas.—"An improved "button," suitable for shirts, cuffs, coats, and other wearing "apparel." The button head has on its under side "a straight "stem," the length varying according to the intended appli cation of the button. To the stem "two metallic arms or "hands of equal or unequal length are adapted, one being "fixed and the other moveable;" the arms serve to retain the button in its place. The fixed arm is soldered to the stem "and is perpendicular to it, thus forming a hook with the said "stem." The moveable arm "clasps the shank of the button "by means of a small spring nipper, which turns round the "said stem and moves above the fixed arm and opposite to it; it may "at option be placed under the fixed arm."

To fix the button a hole is made in the fabric large enough "to allow the passage of the two arms," the moveable arm being placed "under the fixed arm." Both arms being passed through the hole, the moveable arm "is then moved back by "turning it half round."

The fixed arm may be soldered to the stem "in any desired " direction," and other contrivance than a spring nipper may be used.

[Printed, 4*d*. No Drawings.]

A.D. 1856, August 21.—No. 1958.

FARMER, George James.—"Improvements in machinery to " be used in the manufacture of chain links, buckles, buckle " slides, rings, and other similar articles." Two machines similar in general construction are described, one for making chain links of an H shape, the other for making buckle slides. The machines required for making the other articles "vary " only in the tools."

The framework consists of standards and cross bars bolted together; under them is a shaft carrying a fly wheel, driving pulleys, and cams "of any form that may be required to upset " or actuate the working tools." The feet of four bent levers rest upon the cams; their heads carry "the cutting, shaping, " and bending tools." A bundle of wire is hung upon a reel bracketed in front of the machine, and one end of the wire is inserted into a feed guide fixed on one of the levers and receiving "an alternating to-and-fro motion." A suitable length of wire to form a link (the length being regulated by a guide stop) is "conducted into the centre of the machine;" a bending peg fixed in another of the levers advances over the wire, and a second similar peg in the head of a third lever is brought forward under the wire. The wire is thus bent into the shape of an S, and a bending tool in the head of the fourth lever closes "the upper loop down on the second bending peg." A cutter now severs the wire at the point where it emerges from the feed guide; two clams, "each grooved in the jaw to suit " the form of link," then advance and close the loops round the pegs. The pegs are withdrawn, and a "jerker acting as " sheath to the first bending peg" throws the finished link into an inclined tray.

For making buckle slides "an alteration in the working of the feed guide is requisite "to enable it to supply an increased length of wire. This is effected partly by employing a different form of cam, partly by causing the feeder to work in the manner shown in one of the drawings, namely by aid of "a " plate slotted in the form of a quadrant;" a pin on the lever which works the feeder passes through the slot, "the parallelism of the feeder being maintained by causing it to work in "grooved guides." Forks keep the wire in the right direction. A shaping tool "of the same girth as the internal girth "of the article to be produced" is brought over the wire; after the shaping the cutter acts; then the clams close the wire, "leaving two horns in the centre of one side," which horns "are intended to form the ring." A peg is thrust between the horns; grooves in the upper jaws of the clams bend each horn into a semicircle, and a hammer descends on the head of the ring and finishes it. The slide is jerked off as before.

[Printed, 1*s*. Drawings.]

A.D. 1856, September 3.—No. 2045.

GHIDIGLIA, Simon and TURLETTI, Louis.—"An improved buckle." The "forked tongue" of the ordinary buckle is dispensed with. The improved buckle consists of two parts, namely, a body and a moveable frame. The body may be more or less curved except at the extremity to which one end of the strap is fixed; the other extremity is curved upwards, "so that by raising the body of the buckle the band "or strap may be withdrawn." A tongue piece projects "below the body of the buckle at an angle of at least forty-"five degrees." The frame is pivoted to the body; it hangs down below the body. The loose end of the band or strap is passed round the frame and brought into contact with the tongue piece; the ends "being pulled in opposite directions "produce the effect of a lever, which secures the strap or "band more firmly the tighter it is drawn."

The tongue piece may be dispensed with by forming the curved end "with a curve having a sharp edge."

[Printed, 6*d*. Drawing.]

A.D. 1856, September 4.—No. 2051.

MORRISON, John and AMPHLET, Samuel.—"A new or "improved fastening for belts, bands, and other such like "articles." This fastening consists of two plates of metal. The one is a flat plate having its two sides turned down at right angles and each side pierced with a slot in an inclined direction. The other, to which one end of the belt is fixed, is a flat plate having at each side a pin "twisted or pressed out "of the plane of the plate" at about the same inclination as the slots.

The free end of the belt "is inserted between the plates and "pulled so as to withdraw it again;" it then "brings the "moveable plate with it, which in its motion approaches the "other plate," and the end of the belt "becomes grasped "between them and firmly secured." To withdraw the end the plates "are held in the position in which they are most "distant."

Sometimes there are two slots in each side of one plate and two pins on each side of the other. Sometimes the upper plate (or both plates) is slightly corrugated or indented. Sometimes a piece of cloth or rough substance is cemented to the upper plate.

[Printed, 6*d.* Drawing.]

A.D. 1856, September 10.—No. 2120.

FORSTER, William Henry.—"An improved fastening fo "articles of jewellery, brooches, or dress ornaments." This fastening secured to a brooch or other ornament allows of more secure and expeditious mode of attachment to dress than hitherto.

The fastening consists of (1) a tubular case slotted in the upper portion; (2) sliding stems or end pieces fitting within the case; (3) curvilinear or talon-shaped pins working on pivots secured to the case; (4) reacting spiral springs for extending the stems and keeping the pins in an inclined position; (5) sliding stops within the stems for "affording "additional security to the fastening by locking the sliding "stems and pins through the medium of thumb studs"; (6) pins and slots for regulating the action of the stems; (7) "stud "movements for actuating the pins."

To attach the brooch to a dress, it is simply necessary to give an inward sliding movement to the stems; this raises the pins into a suitable position for clutching the material; on removing the pressure on the stems the pins through the intervention of the springs "resume their horizontal or "quiescent position in such manner as to hold the dress "firmly between the pins and the outer surface of the tube."

[Printed, 6*d.* Drawing.]

A.D, 1856, September 17.—No. 2173.

MARSDEN, Charles.—(*Provisional protection only.*)—"Improvements in fastenings for shirts and other garments, "together with an improved tag." The inventor describes his fastening as applied to the wristband and to the neck of a shirt, premising that it "may be washed with the garment." The wristband fastening is composed of two thicknesses of fabric, stitched together at one side so as to form as it were "two flaps." Upon the under flap he sews "four or more "cross loops;" at one end of the flap he secures one end of a piece of tape or other material; he then passes the tape through all the loops, "commencing at the opposite end of "the flap," and the fastening is ready for attachment. This is effected by "sewing the lower flap to the wristband;" when on, the wearer fastens the wristband "by turning back the "upper flap," pulling the free end of the tape, passing it round the wrist and turning it under the tape "to form a loop "or stop;" the wearer then turns down the upper flap, and the tape "is concealed from view." The free end may be held by a metal stop. The cross loops and tape may be attached directly to the wristband, thus dispensing with the under flap.

The neck fastening is "attached from the back of the neck "to a short distance down the side of the neck." Two pieces of tape are sewn to opposite sides of the opening; on one piece are "several single cross loops," on the other as many "double "cross" loops, so placed that "each single loop shall lock "or fit in" between each double loop. "To that part of one "tape which is to be at the extreme back of the neck," one end of a piece of cord or tape is fastened and laced "through "the loops on each side alternately." The shirt is fastened by pulling the free end of the cord, and as the cord must be of great length, "a pocket is provided for it" in the side of the shirt.

The tag is "formed of a plate of metal, one end or side of "which is toothed to take a firm nip on the hold of the cord "or lace."

[Printed, 4*d*. No Drawings.]

A.D. 1856, September 23.—No. 2225.

TAYLOR, John George.—"Improvements in fastenings, "connectors, and couplings, and in the application thereof." The improvement consists in combining springs and hooks with rings, cords, chains, eyelet holes, &c. The fastenings are applicable for guards to hats, watches, purses, &c., and as a means of uniting garters and parts of garments. One kind of spring is intended to be used as "a button fastening."

The spring is composed of two pieces of metal; one part forming the rim or frame is "arched" at the top, bent inwards at the bottom of the arch, then widening outwards, round at the bottom, and divided with a slanting cut near the lower end; the other is a spring riveted to the frame and tending to keep the cut closed.

The hook is blunt at the outer end; the other end carries a "swivel top," and "a loose ring" works in the top, "and "when placed over the end of the hook makes it fast.

The spring for a button fastening is made "of one piece of "metal" bent into a somewhat similar shape to the one before described.

According to the article to which the fastening is to be applied, a ring or a cord, or a chain is fastened to the spring or the hook, and a ring is fastened to the other end of the cord or chain. Purses require to have an eyelet hole made in them.

"Brooch tongues" are fastened by fixing to the brooch "a "bead or other piece of metal perforated," through which the tongue "is thrust, then bent down;" this bending "fastens "the tongue and gives the requisite spring."

Chains are made by fastening the links together with "double-headed pieces of metal."

[Printed, 10*d*. Drawings.]

A.D. 1856, September 29.—No. 2281.

JENKINS, Henry.—"Improvements in the manufacture of "buckles and other dress fasteners." This invention relates to "the method of constructing the joints of buckles and "clasps" for hat bands, girdles, braces, and similar articles of dress, and to "the combination of the parts" by which

" the fastening or pinch upon the article of dress " is obtained. The patentee exhibits his invention in groups of diagrams, each group showing "the various forms which the metal plate " of which the articles are to be formed is made to assume in " the progressive stages of manufacture of each buckle or " clasp from the blank to the complete article." Thus,—

Group A shows a buckle suitable for a hat band and made from one piece of metal.

Groups B and C, a buckle for a hat band and other purposes made from two pieces of metal joined together.

Group D, a buckle or clasp formed of three parts and " intended as a belt fastener for children's dresses and other " purposes ":—The middle part or face plate is "capable of " being partially rotated or turned to and fro" on one of the outer parts; a flange on the other outer part passes into a slot on the said outer part under the face plate.

Group E, a belt or band fastener consisting of two parts; the pinch or fastening is caused "by a slight motion of the " parts from diagonal to vertical when connected."

Group F, a belt fastener composed of two parts, which are " fastened by the pinch which takes place between the edge " of the bar of the front plate" and the edge of the back plate.

Group G, a belt fastener consisting of two parts which are united "by fitting the smaller part" into "the hoop of the " larger part" and by "a slight turn of the two parts" in different directions, when a neck and a lug on the smaller part are forced into slots on the flange of the hoop.

Group H, a belt fastener consisting of two parts "which act " upon the principle of a wedge":—The thin end of one part is passed through two slots in the other (a "tubular slide " piece"); the free end of the belt is passed through both slots; and a strain upon the belt pulls the slide towards the thicker or double part of the other and "thus wedges the " belt."

Group I, a buckle made in two parts; the free end of the belt is passed between the front and back plates; a strain on the belt "has a tendency to wedge the loose end of the belt " tightly between the teeth or chape on the centre bar" and the thickened end of the under part. A modification of this is described.

Group K, a clasp or buckle consisting of three parts, namely a face plate, a tube fixed on either the back or front of the plate, and a "wedge-formed bolt" sliding up and down in the tube. The free end of the belt "is to be passed under the "tube," and the bolt when pushed down acts "as a wedge "upon the belt."

[Printed, 1*s*. Drawings.]

A.D. 1856, October 7.—No. 2340.

BARRATT, Oglethorpe Wakelin.—"Improvements in the "dyeing or staining and ornamenting of articles of pearl, "bone, and vegetable ivory." The patentee proposes to ornament buttons and other articles "by applying several "colours thereto." He prepares buttons made of pearl, &c., for dyeing by plunging them into a pickle composed of water containing one per cent. of nitric acid, sulphuric acid, or hydrochloric acid; if the material contains "an excess of lime," he uses sulphuric acid; when there is "an excess of animal matter "at the surface, he uses hydrochloric acid."

Instead of using vegetable dyes he obtains the required tints from "solutions of the metals and the salts and oxides of the "metals." He so modifies the chemical qualities of the metallic solutions as "to ensure the setting up of a chemical "action when the substance to be dyed is immersed in the "liquid and the displacement of an ingredient of that substance by the metal or metallic compound." Thus to stain pearl of a green colour he uses a solution of copper and (according to the required depth of colour) bichromate of potash; for a scarlet colour he uses iodide of mercury; for crimson chromate of silver; for greens and blues salts of copper; "and so on, taking care in all cases to provide such "chemical affinities as will ensure the desired chemical "action."

He first dyes the surface of any desired colour; he then cuts away "in parts through the surface colour," and then dyes "the parts so cut away blue, green, yellow, red, grey, or any "other colour." If preferred, "the parts cut away may be "left in the natural and undyed state."

The buttons, &c., may remain in the pickle until they are perfectly clean; they are then rinsed in clean water, and immediately put into the colouring bath; when they have received the desired tint, they are to be taken out, rinsed, shaken in sawdust or wiped, and (if required) polished.

The patentee mentions in the Specification the solutions, &c., which he uses for obtaining a great variety of tints.

[Printed, 4*d*. No Drawings.]

A.D. 1856, October 23.—No. 2489.

BROUGH, NEHEMIAH.—" Improvements in dress fastenings." This invention relates to the construction of (1) a buckle or substitute for a buckle " particularly applicable to braces," (2) a belt or band fastening.

1. This consists of two parts, namely a rectangular frame having its ends " bent at right angles to the plane " of the frame, and a frame composed of an upper bar furnished with " a series of teeth " and a lower portion " formed into a nearly " semicircular figure " ; the bar is jointed to the ends of the upper frame. The brace end is connected to the semicircular part ; the brace length is passed at the back of the upper bar of the upper frame, then in front of the teeth, and then at the back of the lower bar of the upper frame. When the two parts of the brace are pulled in different directions, the teeth take into the brace length.

2. One part consists of an ornamental ring having two ears or projections on its under side ; the other of an ornamental disc nearly corresponding in shape to the hollow or eye of the ring. In fastening the parts together the disc or hook part " is " carried so far past the position at which it would fill the eye " that the ears may engage underneath the disc when " a contrary " motion " is given to it. This arrangement prevents " the " effect called gaping which occurs in the ordinary belt fastenings."

[Printed, 6*d*. Drawing.]

A.D. 1856, October 23.—No. 2491.

HORREX, THEOPHILUS. — " Improvements in fastening " buttons and other similar articles on to garments and " other things." Instead of attaching buttons by sewing, the patentee uses " a double catch " capable of piercing the garment and passing into holes in the back shell of the button.

The catch is a wire staple "with two rectangular bends," each pointed and barbed at the extremity. The button is usually "of the kind known as covered, having a metal shell" which is pierced to admit the points and the barbs; should the button be of ivory or other such material, it should have by preference a metal back. The legs of the staple are passed through the fabric of the garment, and the points and barbs into the holes in the button.

[Printed, 4*d*. Woodcuts.]

A.D. 1856, November 22.—No. 2776.

WRIGHT, John Skirrow.—"Improvements in the manu-"facture of paper or papier maché and metal buttons." The face of these buttons is made to imitate marble or other stone, mosaic, &c.

The papier mâché button is made and japanned as heretofore; but previous to the final polish the face is grooved or recessed, and the grooves or recesses are filled in "with "japanners' varnish, paints, or cements, in excess by pre-"ference, so as to require the protruding quantity to be ground "or rubbed off." If the button is to be a sewn-through button, a recess is cut out of the middle, and the holes are pierced through the recess. The button is subjected to heat and finished in the ordinary manner.

Metal buttons are grooved or recessed and filled in with varnish, paint, or cement, in like manner to the papier mâché button.

[Printed, 4*d*. No Drawings.]

A.D. 1856, December 5.—No. 2886.

MOORE, Henry.—"A boot and shoe stud." This stud is composed of a disc about one-fourth of an inch in diameter "like the head of an ordinary flat button," of hard metal "that will receive solder," and of a shank of soft copper wire or other soft, tough, and flexible metal. The shank is either soldered or riveted to the disc. The shank is passed through a hole in the leather or cloth from the under side; when passed through, it is perforated on the outerside of the leather or cloth, "by means of a pair of forceps, having on the one

" side a perforated shaft and on the other a long sharp point " of steel." Any other suitable instrument may be used. Thus on the outer side of the material there is "a round " metallic hole like the shank of an ordinary button," through which strings can be drawn to unite the sides of boots and shoes.

The invention is applicable to all articles which require lacing.

[Printed, 4*d*. No Drawings.]

A.D. 1856, December 8.—No. 2906.

ASTON, John, and BRANT, John.—"An improvement in " the manufacture of covered buttons and covered orna- " ments." The front metal shell has the central part removed, and the edges around the opening are raised to "act as a " frame to receive and to have fixed therein a central orna- " ment" of any suitable material. In making up a covered button or ornament when such a shell is used, it is not necessary to remove or puncture the central part of the front covering fabric, as this part passes behind the ornament.

The patentees describe the process by which the various parts of the button or ornament are brought together, remarking that "the form and arrangement of tools may be varied."

[Printed, 10*d*. Drawing.]

A.D. 1856, December 20.—No. 3014.

EDRIDGE, John.—(*Provisional protection only.*)—"Im- " provements in the manufacture of hair pins, shawl, and " other dress pins, parts of which improvements are also " applicable to the manufacture of clasps and similar dress " fastenings." Hair pins are corrugated or otherwise bent either throughout their length or part of their length or at one or both points. To give the pin a greater strength of spring the wire at the head is coiled. The apparatus used for making the corrugations consists of (1) two dentated cams whose motions are governed by springs; (2) a mandrel on one end of a sliding bar; (3) pegs for holding the wire in position in front of the mandrel. The forward motion of the mandrel " doubles the wire and drives it between the cams."

Shawl or breast pins are made with a hook in such manner that, when the stem is inserted through the shawl or cravat up to the head and "withdrawn a short distance," the hook will enter the fabric and "prevent the pin being accidentally or "surreptitiously removed."

Clasps are made "by coiling wire, one end of the said wire "being shaped into a hook closely pressing the back of the "coil;" a loop or catch "can be sprung on to this hook by "the resiliency of the coiled wire."

[Printed, 6*d*. Drawing.]

A.D. 1856, December 22.—No. 3022.

MILL, William.—"Improvements in joining bands, in connecting fastenings to bands, and in attaching bands to "articles requiring the same." The ends of a band are joined by placing them on a plate of metal and folding or coiling up the plate and the ends. Other methods are described :—The ends may be placed back to back on the plate, and each end of the plate may be coiled up over each end of the band. Or the ends of the plate may be serrated, and one fold of each end will be sufficient to hold its end of the band. Or slots may be cut in the plate, and the ends of the band may pass through them to the ends of the plate before the folding. The edges of the slots may be serrated. Or two arms (with or without serrated edges) may be cut out of the middle of the plate and folded over the ends of the band "from the middle towards the ends of the blank."

Garter fastenings are attached to garters, glove fastenings to gloves, and various dress fastenings to articles of dress, "by "coiling or folding up the ends of the band with a metal "arm or arms on that part of the fastening to which the "garter or band is to be attached." The coiling or folding may be effected by any one of the foregoing methods.

To attach a band to articles such as a purse, pocket-book, or the like "a cruciform plate of metal" is used; the ends are secured as before described to two opposite arms, and the others are passed through slits in the purse, &c. and are then bent down or clenched. If the other arms are not required to be attached to an article, as for example, a letter or paper holder, they can be bent down upon the folded arms.

[Printed, 8*d*. Drawing.]

1857.

A.D. 1857, January 16.—No. 134.

EDRIDGE, JOHN.—(*Provisional protection only.*) — "Im-"provements in 'safety pins' for dress and other similar "purposes." The wire of which these pins are made is bent at the head so as to form a "protective catch." When the stem is passed into the garment or the hair, "half a turn or a "whole turn or more" is given to the pin, and the point of the catch enters the garment or the hair and prevents the removal of the pin "unless a similar action in the opposite "direction be given." The catch may be made "after the "wire has been twisted once round the shank of the pin," or "it may be so coiled for a great portion or even the whole "length of the shank."

The inventor makes some hair pins "having three or more "shanks." Some he makes with two shanks, and "forming "the wire into a loop or eye at the centre of the head" he attaches one of his coiled pins to form the third shank. "The "spiral upon being turned round passes over the wire forming "the outer shanks and worms itself into the hair."

[Printed, 4*d*. Woodcuts.]

A.D. 1857, January 17.—No. 150.

LONG, JOHN.—"Improvements in the fastenings of brooches "and other articles of jewellery." The object of this invention is "to render the fastenings of brooches and other articles of "jewellery more secure and durable."

Near the top of the brooch at the back is soldered a box of thin metal containing a hooked catch piece and a helical spring; the face plate of the box is fastened on by screws, one of which "serves as the fulcrum" of the catch piece, while another "serves as a stop to limit the extent to which the "aforesaid catch piece is forced and held back or locked "by the pressure of the spring." Near the bottom of the brooch and opposite the box is soldered "a solid ring catch." The pin, formed with a head and a shoulder near the head, is "distinct and separate" from the brooch.

The point of the pin is passed through the material to which the brooch is to be affixed; the ring is passed over the point;

and the portion between the head and shoulder is pressed "upon the top and underneath" the hooked part of the spring catch.

If it is preferred to connect the pin to the brooch by the ordinary hinge joint, the box with its contents is substituted for the solid ring.

The invention is applicable to "bracelets, armlets, necklaces, "and such like articles, in lieu of ordinary snap or other "fastenings."

[Printed, 6*d*. Drawing.]

A.D. 1857, January 31.—No. 291.

NEWTON, William Edward.—(*A communication from Jean Felix Bapterosses.*)—"Improvements in the manu"facture of buttons." The buttons are made of clay, porcelain, or other plastic material, and with metal shanks.

The apparatus for making the bodies of the buttons consists of moulds to receive the material and dies to compress it. The moulds, adjusted in a plate and fastened therein by pins, are perforated to allow of the passage of vertical rods, which carry at their upper ends either screws or a portion "to form "conical or dovetail recesses in the bodies of the buttons," and at their lower ends toothed pinions. The dies are similarly adjusted and fastened in an upper plate; they are brought down by a swinging arm, and the rods are caused to rotate by the forward motion of a rack which acts "at once "upon the whole row of pinions." The bodies thus compressed and hollowed out for the reception of the shanks are placed face downwards in recesses or cups formed in a copper plate which is provided with handles at its extremities. A bit of fusible metal is laid upon the orifice of each body; the plate with its contents is put into a furnace, and when the metal is fused, the shanks are inserted.

[Printed, 8*d*. Drawing.]

A.D. 1857, February 6.—No. 345.

DÈCLE, Antoine, and DRAULT, François Alexandre.—(*Provisional protection only.*)—"Improvements in the "manufacture of bracelets," that is to say, in the manufacture of "chain or metallic fabrics" for bracelets. A metallic tube "of a well-known stitch" is woven on a mandrel, and is successively passed through a number of holes in draw-plates to contract the diameter, the mandrel being changed for a smaller one at each draw. The tube "after being flattened "with a pincer or other suitable pressure" is passed through "a flattening tool" composed of an "iron frame edged," a groove, a screw, and a sliding piece or wedge, and is then fit for manufacture into part of a bracelet.

The invention relates also to "the application of a buckle "for clasping or fixing the bracelet;" the buckle is shown in the annexed sheet of drawings, but no description is given in the Specification.

[Printed, 6*d*. Drawing.]

A.D. 1857, February 14.—No. 439.

FORREST, Alexander. — (*Provisional protection only.*)— "Improvements in the construction and ornamentation of "belt or band fastenings, and other dress fastenings." The ends of the belt are connected to the fastening "by means of "a catch fitted with a slide, by which the length of the belt "can be altered." The catch or hook is attached to the back of the ornamental middle part "by means of a strip or plate "of metal placed across the said hook or catch;" the ends of the strip pass "through the back of the centre ornament."

Belt fastenings are ornamented by centres of "porcelain, "glass, pearl, printed or coloured paper;" these are sometimes protected by a covering of glass. Brooches and other dress fastenings are similarly ornamented and protected.

[Printed, 4*d*. No Drawings.]

A.D. 1857, February 18.—No. 477.

DAVENPORT, Thomas William, and **COLE**, Samuel. — "A new or improved method of manufacturing and ornamenting "articles in papier maché and charcoal." These articles are principally "mourning brooches, bracelets, shawl pins, and "other dress appendages," and the improvements consist in "the application and adaptation thereto of certain of the "processes employed by lapidaries for producing the facets "and sharply defined angles on precious stones or glass." The patentees describe the manufacture of a brooch of papier maché.

The material "is in the form of a board or panel of such "width and thickness on the end that when sawn into "thin slices across the fibre of the paper each section is "sufficient for one brooch." The piece is shaped with a saw or punch according to the desired form. The blank is put into a lathe furnished with "a rotating disc cutter toothed "upon the periphery and also on the sides." Concave ornamental sinkings or sharp angular lines or facets are cut on the surface. Sometimes "laps or pulleys of wood covered "with emery or glass paper" are used instead of circular cutting tools. The blank is then japanned; and the surface becoming rough thereby, "it is re-ground to smooth it" by means of "stone pulleys or lead, steel, or pewter laps or "pulleys, these last named supplied with grinding composition "if necessary." The fine cutting is now put in "by the "means already described for the rough cutting." The blank is again japanned and then polished "with a brush mounted "on a spindle in the lathe, or on the wood lap with rotten "stone;" in some cases the laps are made of cork for this operation. The japan is hardened in a drying stove, and the blank is again polished with "wood laps without any covering "material." These laps "are previously turned in a lathe "to the outline necessary to form the pattern upon the brooch." The edges or outline of the brooch are turned by means of laps or cutters to the desired shape, "if that shape be other than "an angular one," and the brooch is finished off by glossing it, for which operation the patentees prefer "a leather bob or "wood lap or roll covered with leather or cork lap and "supplied with jewellers' rouge or the putty used by glass "cutters."

Instead of rotary cutters and laps worked in a lathe, the foregoing effects may be obtained "by the use of files, wood "and cork bobs, or laps" working in "any other direction "than a rotary one."

[Printed, 4*d*. No Drawings.]

A.D. 1857, February 23.—No. 523.

BANNISTER, JOSEPH JAMES.—(*Provisional protection only.*) —"An improved watch and property protector pocket." The pocket is made of leather or other suitable material, and

" may be strengthened by means of sheet steel, wire rings, or " the like." The opening is provided with a clasp or other fastening and with " a spring or springs to render it self-" opening." Eyes are attached to the pocket for sewing it to the dress; or it may be otherwise secured thereto.

[Printed, 4*d*. No Drawings.]

A.D. 1857, February 23.—No. 534.

BARNETT, George.—"Improvements in fasteners for parts " of garments." Belts or straps are fastened by an article " made somewhat similar to a buckle." The bar which carries the tongue "is carried by two side pieces which move on the " back end" of the frame or on projections "at the inner " edges of the sides" of the frame. This bar is connected to another bar whose ends "move in holes formed in the ends of " the side frame." When the tongue is released it "can open " a short distance from the fore part" of the frame. Sometimes the back bar is dispensed with, and the ends of the pieces which connected the two bars are turned outwards and work in holes formed in the ends of the sides of the frame. Another variation is shown in the sheet of drawings, in which the back bar is retained.

This fastener may be made "without any moveable tongues " or tongue;" it consists of a frame, a cross bar carrying a fixed tongue, "which points backwards," and a ring or loop at " the back part of the frame."

"The fore part of a hook" for uniting parts of a garment " is formed with a forward projection." This projection enters the eye, "and remains behind the part of the garment in " which the eye is made."

A fastener for holding button shanks in eyelet holes is made by bending the ends of a piece of wire "in opposite directions " or at right angles to each other," turning the points "slightly " outwards," and bending the wire in the middle "so as to " bring the two halves together."

[Printed, 6*d*. Drawing.]

A.D. 1857, February 24.—No. 543.

JOHNSON, John Henry.—(*A communication from Hypolite Marie.*)—"Improvements in fastenings for dress and other "purposes." One part of the fastening is a "hooked plate" attachable to the garment, belt, or other article by rivets or an "elastic or non-elastic band;" the "essential features" of the plate are that "it is quite flat on the surface, and has its "extreme edge turned under so as to form a hook;" it may have a small button or a recess for the purpose of "pushing "it into or out of its place."

The other part is attached by passing two small claws or tongue pieces through the material and clenching them; the front portion is inclined so that the hook slides freely up and over it until it catches in a recess in the back portion.

[Printed, 6*d.* Drawing.]

A.D. 1857, February 25.—No. 558.

SPENCE, JAMES—(*Provisional protection only.*)—"An im-"provement in the manufacture of artificial coral." The substitute is "vegetable ivory." The inventor makes articles of this substance and dyes them by boiling them in "a compo-"sition of lac dye, cochineal, and a solution of tin." When the desired dye has been obtained, he washes the articles "in a "strong solution of soap."

[Printed, 4*d.* No Drawings.]

A.D. 1857, February 28.—No. 594.

FONTAINEMOREAU, PETER ARMAND le Comte de. —(*A communication.*) — (*Provisional protection only.*) — "Im-"provements in finger and other rings," namely such as are used "for securing cravats." The ring is made in two parts which turn on a hinge and close by means of a spring, hasp, catch, or other contrivance.

[Printed, 4*d.* No Drawings.]

A.D. 1857, March 2.—No. 611.

POUPARD, WILLIAM.—"An improvement in buttons and "means of fastening buttons to garments and fabrics." The back of the button is of metal "with an aperture in the centre "and with a flap turned up at a point between the inner and "outer edge of the back;" there are also "two recesses formed "on the inner side of the back."

To secure this button to a garment a pin is passed "twice "through the fabric, whereby a sort of loop of the fabric is

" formed;" both ends of the pin are on the side on which the button is to be fixed; one end is introduced through the aperture in the back; the loop also enters the aperture; the other end is placed under the flap; the button is turned until the ends enter the recesses; the flap "is then turned round, " and the attachment is complete."

The patentee employs "a metallic cup, disc, cone, or guard " for protecting the fabric." There are slots or holes in the guard; the pin is passed through the fabric, then through the guard, and then again through the fabric.

The patentee does not confine himself to the employment of a flap "as an opening without a flap will answer."

[Printed, 6*d*. Drawing.]

A.D. 1857, March 3.—No. 629.

MAIR, Robert.—"Improvements in apparatus for protecting " articles worn on the person." The patentee describes his apparatus in its application for protecting watches. Two segments of thin metal, lined with soft leather or other substance, "embrace about three-fourths or four-fifths" of the watch's periphery; they are connected "by a catch arrange- " ment which prevents one segment moving without the other." An outer segmental piece of thin metal, "embracing about " one half of the watch," is jointed at its end to the inner segments; it has attached to it a blade spring which is "made " to press on one side of the catch so as to cause it to embrace " the two inner segments," and when the watch is inserted " hold all firm." At the bottom of the outer segment is a button to be "passed through a hole in the pocket," and through the button is passed a chain or cord, and "is thence " conveyed away to the part of the dress chosen by the wearer " as the best part for secure attachment." This chain or cord is "connected with the blade spring" for the liberation of the watch when required. Or "a connection may be brought to " the upper part" of the protector;" this by being pressed will liberate the watch "as the hand is passed into the pocket " to draw it out." The weight of the watch when put into the protector "brings down the moveable parts" of the inner segments.

[Printed, 6*d*. Drawing.]

A.D. 1857, March 23.—No. 817.

JONES, Frederick John.—"An improved buckle or fastening." The lower portion of a buckle frame is made in the shape of "an apron or flap," and slotted to receive the head of a "connecting piece." The head of this piece is attached to a a neck which terminates in a loop for the reception of brace ends or one end of a belt or strap; the lower bar of the loop carries a friction roller. The head of the loop "is turned "sideways to be inserted in the slot," and after being so inserted "and turned round flat" the fastening is complete. The head is "capable of great play in the slot" without the liability of the parts becoming detached.

Sometimes the connecting piece is made to terminate in a plate or flap; this is pierced with holes for affixing it to any required article by sewing, riveting, or screwing.

[Printed, 6*d*. Drawing.]

A.D. 1857, March 27.—No. 856.

DELON, Alexandre.—(*Provisional protection only.*)—"An "improved mould for the manufacture of buttons." The matrix is made of two circular pieces of steel or other metal; the inner piece is adjustable by means of a set screw and groove. The die is composed of four circular pieces of steel fitting one within the other, two being furnished with shoulders; these pieces are adjustable by means of set screws and grooves.

The faces of the matrix and die are so formed that "when "the bottom plate of the button is inserted and pressure "applied, the closing of the button is effected." The shank part "is formed by a central stud in the die."

[Printed, 4*d*. No Drawings.]

A.D. 1857, April 2.—No. 915.

HOLDEN, Howard Ashton.—(*Provisional protection only.*)—"Improvements in carriage lamps and general carriage and "harness furniture and fittings." The inventor includes buckles amongst his fittings, and the object at which he aims is "to economise the cost of certain portions of the materials "used."

For this purpose he uses sheet zinc and block tin instead of plated metal, and in place of copper and copper alloys "zinc "with such suitable alloys as shall impart to it necessary "malleableness or ductility for the purpose of working." The zinc and tin can be electro-plated and burnished when required.

[Printed, 4*d*. No Drawings.]

A.D. 1857, May 7.—No. 1292.

ABERDEIN, William Charles.—(*Provisional protection only.*)—"The tubular elastic fastener and stud for gentlemen's "shirt collars and wristbands and other garments." This fastener consists of a tube made of any metal, or of glass, ivory, or other suitable material, an elastic cord, and a stud or button of material similar to that of the tube.

"A small piece of round silk elastic is passed through a "small tube; the elastic is held tight; a knot is then tied in "the elastic, and the knot of the elastic is then inserted in a "button or stud, and the fastening is formed."

[Printed, 6*d*. Drawing.]

A.D. 1857, July 6.—No. 1872.

MUNT, William.—"A shank to be attached to all descrip- "tions of buttons, to be call'd a patent eyelet shank button." The shank is of metal and made with a head on one end and an eyelet on the other. The head is inserted into the button body; the eyelet is passed through the material to which the button is to be fastened and is "clenched over a collar or "washer of metal."

[Printed, 4*d*. No Drawings.]

A.D. 1857, July 30.—No. 2073.

PURCELL, James.—(*Provisional protection only.*)—"Im- "provements in attaching or securing buttons to articles of "clothing." The inventor attaches buttons by means of wire. The wire is "cut into convenient lengths and passed "through the holes of the buttons and the cloth or material;" the ends are bent in opposite directions, pressed flat, and "secured between the lining and the external fabric." If great strength is required, two pieces of wire are used for each button; each is passed "through opposite holes of the

" buttons," the ends " being reversed so as to bear any strain " to which the buttons may be subjected."

When the buttons are near each other, they may be still more securely attached "by looping the wires between the " lining and the external fabric."

If steel or iron wire is used it should be galvanized.

[Printed, *4d.* No Drawings.]

A.D. 1857, July 30.—No. 2077.

FREARSON, JOHN. — " Improvements in feeding, cutting, " shaping, and piercing metals," especially applicable to the manufacture of "buttons, eyelets, and other articles of like " manufacture." 1. The improvements in feeding metal consist in feeding "sheet metal to cutting-out, shaping or raising, " and piercing or other dies, either one or more being cut or " operated upon at once across the sheet," also in feeding blanks and shaped or raised or pierced articles "to the dies " to which it may be required to feed them, either one, " two, or more at a time," and conducting the blanks or articles "to the positions where they are ejected from the " machine."

2. In cutting metals the improvements consist in cutting from sheet metal one, two, or more blanks or shaped articles " in a line at right angles to its length," when the metal is fed according to this invention; also in cutting the rough or thin edges off the pierced edges of articles, either before or after they are cut from the sheet.

3. The improvements in shaping metals consist "in shaping " metal articles in the sheet of metal in a line at right angles " to the length of the sheet" (when fed according to this invention), "when two or more rows of eyelets are shaped " across the sheet of metal in a line at right angles to its " length either with or without" the improved sheet metal feeder; also in "shaping metal articles in the blanks, when " two or more are shaped in a line or otherwise at one time."

4. The improvements in piercing metals consist " in piercing " metal articles in the sheet in the line or at right angles to " the length of the metal" (when fed according to this invention), "and when two or more rows of eyelets are pierced " across the sheet of metal at right angles to its length " without" the improved feeder; also in piercing articles in

the blanks after having been cut out of the sheet and after the blanks have been shaped, when two or more blanks or shaped blanks are pierced at once, "either with or without" the improved feeder.

The various parts and movements of the machinery are described at length in the Specification, and the following "co-operation of the movements" will enable the reader to form some idea thereof:—A sheet of annealed metal is put "under the first pinching jaw," between "the cutting punch "and die," with its end "against the first gripping foot." The jaw descends and pinches the metal "against the lateral "slide." "The grips ascend, and the lateral and longitudinal "slides advance with the metal to the proper place;" the grips descend and take hold of the metal "on the die block." The punch descends and cuts out a blank, and "the centre ram" in the punch forces the blank "into the mouth of the blank "feeder." The feeders "return for another length of metal;" the pinchers descend and pinch the metal; "the grips ascend "and liberate the metal, and the sheet metal feeders again "advance, and the blank feeder advances with the cut-out blank "over the first shaping die." A ram "descends through the "mouth of the blank feeder and secures the blank in the first "shaping die, and the blank feeder returns for another blank." The shaping punch descends and performs the first shaping process; it then ascends, carrying with it the first shaped blank out of the die, "and the first pair of pliers takes fast hold of "the first shaped article and carries it to the second shaping "tools." Rams in the second shaping tools "take hold "of the first shaped article;" the pliers open and return to the first shaping tools where there has been another blank deposited for another article. The first and second process of shaping being performed, and the articles in the first and second shaping tools being raised from the dies, "the first and "second pair of pliers take hold of and carry them to the "second and third shaping tools." The first and second pair of pliers "return for their respective articles," and a third pair of pliers takes the third shaped article to the fourth shaping tools. A fourth pair conveys the fourth shaped article "to the piercing tools," and a fifth pair carries the pierced article "to the revolving cutter." A sixth pair carries the finished article to a tube leading to a receptacle. "The

" whole of these movements co-operate at each revolution of " the shaft."

The foregoing relates to a machine for making eyelets. The patentee describes also the modifications required "when two " or more of the same processes are performed at one time," and "parts of another arrangement for making buttons com" posed of two pieces of metal."

[Printed, 2*s*. 2*d*. Drawings.]

A.D. 1857, August 13.—No. 2162.

BENSON, James William.—(*Provisional protection only.*) —"Improvements in the construction of bows or handles of " watches, lockets, eye-glasses, and other articles requiring " such appendages." These bows are made with "a double " swivel, which will admit of their turning round in various " directions." Should any attempt be made "to twist off the " bow" from the article to which it is applied, "it will turn " on its axis instead of offering a rigid resistance." The bow may be attached by screwing or otherwise, or it may form part of the case or frame.

[Printed, 4*d*. No Drawings.]

A.D. 1857, September 3.—No. 2304.

PARNELL, George Frederick.—"Improvements in the " construction of hooks and eyes." The rings for fastening the eye to any fabric are elongated; this extra portion of metal is carried "centrally over the eye" and acts as a spring by pressing on the back of the hook and preventing the hook and eye when connected from "falling asunder or too readily " separating."

[Printed, 6*d*. Drawing.]

A.D. 1857, September 5.—No. 2321.

WILKINS, Thomas Bent, and MILWARD, Thomas.— (*Provisional protection only.*)—"Improvements in the com" bination of dies for stamping belt fastenings, and which im" provements are also applicable to the stamping of other such " like articles or ornaments." The inventors describe a die for stamping a belt fastening "in more than one size with the "same design or centre pattern on all the sizes":—

They use a round piece of iron having steel welded on its face; after facing they "turn out the centre to the size of the "centre part of the belt fastening, and into this sunken part "they fit a hub or centre die." Around the large die they "sink the loop part of the fastening in say two or more "sizes," each so arranged that it shall be concentric with the centre pattern. According to the size of the fastening to be stamped, they arrange the centre die "in such a way that the "pattern shall be the same in all the sizes and range in the "same direction."

Any other pattern or centre ornament may be substituted.

[Printed, 4*d*. No Drawings.]

A.D, 1857, September 21.—No. 2450.

PATERSON, JOHN.—(*Provisional protection only.*)—"An "improvement in clasps, buckles, and other like fastenings." These fastenings are made with a spring tongue, the free end of which "abuts against the inside of the hook in"tended to receive the eye or other part of the clasp or "buckle." This tongue prevents the fastening from becoming unfastened accidentally.

[Printed, 4*d*. No Drawings.]

A.D. 1857, September 22.—No. 2451.

FORRESTER, DANIEL. — "An improved fastening for "securing watches, &c. worn on the person, whereby the "same are rendered safe from robbery, to be called For"rester's patent watch and property protector." This protector consists of a "crank swivel fastening with a suitable "length of chain." The joint on which the swivel opens is of the ordinary kind. When the two parts are closed, a pin on each side and "tapped half way up" screws into a collar, and the parts are further held by a screw nut which works up and down the tapped stem of the swivel. When in use, the ring portion embraces the pendant of the watcn, and the outer end of the chain is secured to the inside of the pocket by means of a bar or catch thereon.

[Printed, 6*d*. Drawing.]

A.D. 1857, September 26.—No. 2487.

SPEIGHT, George.—"Improved head plaits, foundations for "wigs, bracelets, and other plaited ornaments for personal "wear." This invention consists in using "dyed manilla "hemp," or "dyed jute," (or a combination of the two) instead of human hair for the manufacture of plaits, wigs, bracelets, guards or watch chains, &c.

The hemp or jute is dyed of the required shade, softened, and deprived of its "dress" by passing it through and saturating it in a preparation composed of "sulphuric acid, soda, "oil, and water." The patentee finds that the hemp or jute absorbs the oil better when it is in a damp state. It is then combed and passed between brushes "to give the requisite "gloss," and is afterwards cut into suitable lengths and worked up in the same manner as hair.

[Printed, 4*d.* No Drawings.]

A.D. 1857, October 3.—No. 2542.

PURSALL, William.—(*Provisional protection only.*)— "Improvements in the manufacture of eyelets." These eyelets are made of "mother-o'-pearl, horn, bone, jet, ivory, "papier mâché, wood, glass, porcelain, vegetable ivory, the "shell of the cocoa nut, and enamel on a metallic base"; they are secured to the garment "by a metal washer at the back."

The processes employed in the manufacture are such as "may be best adapted to the material of which the eyelet is "to be formed."

[Printed, 4*d.* No Drawings.]

A.D. 1857, October 29.—No. 2752.

SMITH, Ephraim.—"An improved safety hook or fastening "particularly applicable to securing watch chains and watches "to waistcoats and other garments." This hook or fastening is composed of three parts, namely, a button or other ornament, a tube, and a hook. The tube is fixed to the back of the button. One end of the hook enters the tube; it is held therein (so as to be capable of turning) "by a pin which "enters a collar formed on the shank," or by pinching in the end of the tube over the collar, or by other means. At the bend of the hook "is an eye for receiving the end of the chain," and at the back of the button there is a notch "into which the

" hook is pressed to close the fastening." To open the fastening "it is necessary to push that end of the hook which " is not held in the tube laterally."

In applying the invention to an earring the eye is dispensed with.

The fastening may be made in the shape of a ring, the parts being a solid piece, a tube, a bolt carrying a pin, and a coiled spring. The tube has "a channel formed in the top " thereof" for the pin to work in, and the spring is inside it. To open the fastening the bolt is drawn back by the pin. "On " the pin being released, the spring forces out the bolt" and closes the fastening.

[Printed, *6d.* Drawing.]

A.D. 1857, October 31.—No. 2770.

DE LANDFORT, LEON.—"An apparatus for protecting the " contents of the pockets of wearing apparel from theft and " loss." This pocket protector is of the following construction :—A light frame (by preference of sheet metal) is attached to the garment by hooks, buttons, or other means. Two springs are hinged to the frame, one at each end; the outer ends are furnished with clips, "each clip passing over one of " the springs;" and both springs pass through a slide "fur" nished with a screw stud by which the protector is also " connected to the garment." To one spring is riveted a plate wherein is a slot for the head of a spring trigger which is riveted to the spring. To the other spring is riveted a stud, which is caught hold of by the trigger when the pocket is closed. The trigger has attached to it a cord which "is " brought out of sight to any convenient part of the person."

The pocket "passes within" the frame and the springs; the top should be made with an elastic fabric, "so that it may " stretch when the spring opens, and contract when closed."

The opening of the pocket is closed by pressing the springs towards the frame until the stud is caught by the trigger. To open the pocket the cord must be pulled to liberate the stud.

For a watch pocket, one part of the frame is bent "for the " watch chain to pass through."

[Printed, *6d.* Drawing.]

A.D. 1857, November 14.—No. 2863.

HASELTINE, GEORGE.—(*A communication.*)—"Improvements in machinery for the manufacture of small metallic "chains." The machine described by the inventor performs "the whole process of cutting the links from the strips of "metal and their subsequent bending and uniting till the "complete chain is formed." Each link has usually four radial arms, "which extend outward at right angles to one "another and terminate at equal distances from the centre in "widened extremities in the form of a cross." The number of arms in each link is not essential, but "the links always "produce a chain of polygonal form, the number of sides or "faces being double that of the arms."

All the working parts are mounted in a metal frame, and the various movements are obtained by the action of cams on the driving shaft; one cam however, "being required to act only "half as often" as the other, is placed on a separate shaft connected to the driving shaft by a cog wheel and a pinion of one half its size.

The strips are drawn over a die bed "by the intermittent "action" of a pair of rollers. The bed has an aperture of the same form as that of the required link. Directly above this aperture is suspended a punch which descends when the rollers have ceased to act, cuts out a link, presses it through the bed and deposits it on a carrier. The carrier moving horizontally conveys the link "over a forming bed." The link "is then forced through an aperture in the carrier" by the descent of the punch upon the forming bed, and at the same time the ends of the arms of the link "are bent at right "angles." The carrier retreats; the link is held in position on the forming bed "by two slender rods," whilst a portion of the arms is "turned inwards by the rising of slides which "form a part" of the forming bed. The arms "are closed "down by the action of two small curved rods." Another link being now deposited on the forming bed, the remaining portion of the arms of the preceding link is "turned over this "link in order to unite the two." When the links have only two arms, "both of them are turned over the succeeding link." The punch, which forces the link from the carrier upon the forming bed, also "finishes the chain and forces it through an

" aperture in the forming bed." The links may be "formed " separate from the machine and fed into the carrier by means " of a suitable stack or feeding tube."

The Specification contains a full description of the various parts of the machine and of their use. The inventor claims the invention of

(1) "the forming guide" or bed for "holding and transmitting the chain during the formation thereof;" also the giving to the forming bed "an angular movement upon its " axis so as to present the chain to the successive links in " such positions that the arms thereof will alternately lock;"

(2) the "double movement" of the punch, which in its last descent clinches the upper arms closely down upon the others, " completes the formation of the link," and at the same time " pushes the whole chain down to give place for the succeeding " operation;"

(3) the "slender converging rods or holders," for the purpose of "holding down the top link while bending over it the first " pair of arms of the link below;"

(4) the "arrangement and operation of the slides;"

(5) the curved rods or fingers "for the purpose of forcing " and holding down the first pair of arms so as to enable the " succeeding pair to be lapped over them."

[Printed, 1*s.* 4*d.* Drawings.]

A.D. 1857, November 17.—No. 2881.

PIDDING, William. — "Improved manufactures, and improvements in the manufacture of piled fabrics, or of mosaic " or tesselated textile and other fabrics, and improvements in " some of the machinery or apparatus, necessary to produce " them, also the application of certain existing or known " machinery or apparatus for their production." These fabrics are made by saturating or thickly coating yarns with adhesive compounds in a liquid state, drying them to a degree suitable for the purpose, laying them side by side, setting them to pattern for mosaic fabrics, and compressing them "in " any appropriate apparatus," sometimes applying heat. The compounds are coloured if required, and such matters are used "as are pliable when in a non-liquid or non-soluble state, " or when deprived of their solvents, or when dry." A pile is produced on one or both sides "by dissolving any desired

" thickness of the cement" and thus "producing or exposing " the before hidden pile."

Some fabrics are made of "coloured threads of gutta " percha, caoutchouc, or compounds;" others "by first set- " ting mosaic or tesselated patterns of coloured threads of " spun glass, or by coating wires, or threads, or yarns, or " coloured threads of spun glass with varnish or other suitable " liquid or substance in solution and then causing coloured " powdered glass or powder of any mineral substance" to adhere to the varnish. If extra strength or thickness is required, fabric or other material is sewn to or caused to adhere to one side.

Some fabrics are cut into pieces; the pieces are compressed into segments; the segments are made into circles; the circles are placed round a drum; the drum is put into an apparatus in which an upper drum presses on the circles, and a cutter working between the drums cuts the fabric into veneers.

Sundry articles are made from these fabrics, and among them are mentioned buttons; these are made by pressure in moulds, and " by means of the application of sufficient heat."

One of the diagrams accompanying the Specification shows the apparatus for cutting veneers; others the presses for compressing the yarns, the fabrics, the veneers, the buttons, &c.

[Printed, 3*s.* 2*d.* Drawings.]

A.D. 1857, November 19.—No. 2911.

COPE, John.—"Improvements in buttons," that is to say, in sewn-through buttons. A disc of bone or other non-metallic substance is perforated through the centre, or pierced with two or more holes for the passage of the needle. A disc of woven or other fabric is made to assume a "cup-like" form, and the bone disc is put into it. A perforated metal shell, covered with a fabric, is combined with the woven disc "by the ope- " ration of a pair of dies" so that the edges of the shell and its fabric "are made to close upon the part" consisting of the woven fabric and the non-metallic disc. The button thus consists of a metal front and a non-metallic back, each covered with fabric. Sometimes the fabrics are double, the front one being ornamental.

[Printed, 6*d.* Drawing.]

1858.

A.D. 1858, January 6.—No. 20.

BROOMAN, Richard Archibald.—(*A communication from Laurent Cordier.*)—(*Provisional protection only.*)—" An improved lock buckle." A tongue is hinged to an "ordinary " lock bolt;" the lock is attached to the buckle frame, and " the front part of the frame" has a recess formed therein "to " receive the end of the tongue." One end of a strap is fixed to one end of the frame; the free end is pierced with holes and "introduced under the fore end" of the frame; the tongue is inserted through one of the holes and "brought opposite the " recess;" the bolt "is shot by the key," and the tongue "is " secured in the recess."

[Printed, 4*d*. No Drawings.]

A.D. 1858, January 23.—No. 129.

BURN, Charles. — (*Provisional protection only.*) — " Improvements in the manufacture of iron cables and chains, " which improvements are applicable to the manufacture of " gold and other chains." A bar of iron is rolled or otherwise made to the shape of a +, "the width of the bar and thickness " of the metal corresponding with the outside width and " thickness of the required chain." The bar is placed on an anvil, and spaces for links are punched out from either the horizontal or vertical part; it is then turned over on the anvil, and spaces are punched out from the other part. There will then be "a square piece of iron or bar along the centre, each " side of which will be the dimensions of the thickness of the " iron." This bar now joins all the links together, and if it is again placed on the anvil, "the punching machine will cut the " centre bar through at all the points of junction," and the effect will be "to separate each link, one being interlinked in " the other and forming a chain." The links are rounded by placing them on an anvil, and "each half link is to be punched " and rounded in succession." The chain is now finished, and when stretched out will be "about one third longer" than the bar out of which it was made.

The foregoing process is applicable to the manufacture of gold and other chains, "with such modifications as the delicacy " of the work and the difference in material may require."

[Printed, 6*d*. Drawing and Woodcuts.]

A.D. 1858, January 23.—No. 133.

HUBER, JEAN JACQUES.—"Improvements in the construction "of brooches, bracelets, pins, and other articles of jewelry." These articles are so constructed that they have "a capability "of movement" by means of which their form "may be much "varied at pleasure."

The system of construction "is based in great part on a "series of rings or other pieces fixed together by screws or "pin-joints furnished with springs." The pieces (which may be varied in shape or ornamentation), "pivot by means of "hinge joints upon the central portion," or upon pieces hinged to the central portion or upon other pieces, so that new forms can be given to the article "without having recourse to a "jeweller."

The annexed sheet of drawings exhibits a brooch and a pin made on the foregoing principle, and the various forms which each may be caused to assume.

[Printed, 6*d*. Drawing.]

A.D. 1858, February 3.—No. 198.

NEWTON, WILLIAM EDWARD.—(*A communication from Louis Amable François Dyormet.*)—(*Provisional protection only.*)—"Improved apparatus for raising and lowering the "skirts of ladies dresses." A girdle has attached to it a number of pulleys or rollers. Strings or cords passing over the pulleys are united at the upper end in a knot and at the lower end to the skirt. The skirt is raised by drawing up the knot by hand.

If it is desired that the skirt when raised should hang in "festoons or flounces," the strings are to be of different lengths.

[Printed, 4*d*. No Drawings.]

A.D. 1858, March 1.—No. 397.

NEWEY, JAMES GEORGE, and NEWEY, WILLIAM MILLARS.—"Improvements in fastenings, especially for or applicable to "wearing apparel and purposes where a spring connexion or "adjustment is desirable in arranging for sale and packing "fastenings and ornaments, and in ornaments for personal "wear." The patentees claim, first, a substitute for the ordinary eye used in hooks and eyes; they employ a metallic looper bar, either straight or curved, and having a needle bar at each end.

Secondly, the application of such loops or bars "modified as "to the number of curves and shape," in the manufacture of bracelets and other ornaments, alone or combined with beads, &c., and threaded on or otherwise attached to elastic or other substances.

Thirdly, the application of wood, stamped or impressed with devices, or having a gem set in it, to the manufacture of ornaments for personal wear.

Fourthly, arrangements of spring catches, &c. which "render "the article to which they may be applied secure from a "sudden snatch or pull;" each part of the catch is formed of one piece of metal, "the projections and springs being por- "tions of the body of the fastening."

Fifthly, arrangements for packing fastenings and ornaments and arranging them for sale. Cards for hooks and eyes are made "in the shape of envelopes folding over so as to preserve "the contents from the air." Or cards of hooks and eyes are attached to the backs of envelopes. Or tubes (of various materials) for holding hooks and eyes, &c. are "so contrived "as to fit into other tubes;" sometimes pieces of elastic are attached "to keep the inner portion covered and in its "place."

The accompanying sheet of drawings shows the modifications of which most of the foregoing are susceptible.

[Printed, 6*d*. Drawing.]

A.D. 1858, March 4.—No. 436.

EYLAND, CHARLES.—"Improvements in certain descriptions "of buckles." This invention relates to the construction of the buckle usually termed a band buckle, and commonly attached to the backs of waistcoats and trousers; the advantage claimed is that the band "can be readily tightened or slackened "with one hand only."

The buckle consists of a loop to which the fixed end of the band is secured; a chape piece formed in one piece with the loop and "making a slight angle" with it; and a partial ring or frame through which the free end of the band passes. The ends of the partial ring or frame are passed round the side of the loop which carries the chape and "form eyes or bearings "in which the chape piece turns."

One figure in the annexed sheet of drawings shews a slight modification of the chape piece; another a buckle called by the patentee "a fast anchor buckle" on the same principle as the above, and "applicable to washing garments."

[Printed, 6*d*. Drawing.]

A.D. 1858, March 12.—No. 503.

ASH, Adolphus.—(*Provisional protection only.*)—"An im-"proved pocket or other like safety clasp or protector." Four flat strips of metal are hinged together so as to form an oblong frame with vertical sides. The frame when pressed together "will present a short strip against a long strip" on each side; when in this position "the left-hand end of the "frame" has a piece of watch or other spring fastened to it externally or internally, hinge to hinge, on each side; this spring will cause the frame to open and assume its oblong shape.

At the right-hand end of the frame when compressed, there is "on one side an oblong hole in the metal strip" (near the hinge), through which "a notched hook-shaped piece of metal "or wire passes through an opening in the opposite strip of "the frame to a short spring to which it is fastened." The two sides are clasped together "by the spring forcing the "edge of the aperture to enter the notch in the hook."

The frame is opened by "pressing the hook, which descends "with its spring, leaving the catch free," whereon the spring on the opposite end causes the frame to open.

The frame is covered with fabric "for lining the openings of pockets, bags," &c.

[Printed, 4*d*. No Drawings.]

A.D. 1858, March 15.—No. 530.

EMPSON, John Fielding, the younger.—(*Provisional protection only.*)—"Improvements in ornamenting certain kinds "of buttons." The buttons are covered buttons, and the improvement consists in painting designs upon the faces thereof in one or more colours. Either oil or water colours may be used, but colours mixed with oil or varnish or other vehicle not soluble in water or injuriously affected by it are preferred. The designs may be painted on the faces after the buttons have been made up, or on the fabric before it is put on the buttons.

[Printed, 4*d*. No Drawings.]

A.D. 1858, March 26.—No. 640.

PARKES, Joseph.—(*Provisional protection only.*)—"Im-"provements in eyelets." These eyelets are made "of one "piece instead of two pieces, as is usual." A piece or plate of any desired figure is stamped, pressed, cast, or otherwise formed from metal, horn, or other material. The plate is perforated with a hole in the middle for the passage of the lace and with two smaller holes for attachment by sewing.

[Printed, 4*d*. No Drawings.]

A.D. 1858, April 1.—No. 694.

DADLEY, Arthur Perks and BROUGH, Nehemiah.—"An "improved buckle or metallic adjuster for adjusting braces, "belts, garters, and such like articles of dress." The novelty claimed for the construction of these articles is "that their "mechanical tendency shall be to securely grip or hold the "fabric or band (which they may be required to adjust) be-"tween the parts rather than to puncture the band or fabric." The patentees do not however debar themselves from the right of sometimes forming the chape with pointed projections.

The brace buckle consists of two frames; the upper one has the inner face of the upper bar serrated and the sides formed with ears which are pierced and bent down at right angles for the reception of projections on the lower and under frame. The upper bar of the under frame is smooth, and the lower bar carries a friction roller for the brace ends to ride on; or the lower portion of the frame may be perforated with an eyelet hole for the passage through of a piece of gut, &c. The brace length is adjusted by passing it under the upper bar of the upper frame and down over the upper bar of the under frame. The serrated part may be formed on the under instead of on the upper frame.

"A spring chape buckle" for braces consists of only one frame, "the chape being formed from the same piece of

" metal," or "secured to the frame by rivets;" the upper edge of the chape is serrated. The lower portion of the frame carries a friction roller or is formed into an eyelet hole.

In a buckle for a garter, waistcoat back, &c., one frame has the inner bar serrated; the other has the corresponding bar notched so that each projection will fall into a notch.

In a belt clasp, the middle part consists of a frame and a spring chape riveted or otherwise secured to it; the free end of the belt is formed into a loop, which is adjusted as to length with a slide and is held tight between the chape and the frame.

In a buckle for a hat band, the chape (formed from the same piece of metal as the frame) has a bar cut out across its face. The band fastened to this bar passes under the chape and the back bar or loop of the frame, round the hat, under the front bar or loop of the frame, and out over the chape. This admits of a modification of the chape bar, which is described.

"A metallic connector for the backs of braces" is a somewhat triangular frame with a base pierced with an eyelet hole. The brace lengths are connected to the sides of the frame, and the back brace ends to the eyelet hole.

[Printed, 8*d*. Drawing.]

A.D. 1858, April 7.—No. 750.

DOHERTY, James.—"Improvements in buttons or dress " fastenings." These buttons are made with projecting tubular shanks or necks to bear the strain and protect the thread. The button consists of two shells; the front one is perforated in the middle and has a bar extending across the perforation. The back shell is formed with a tubular shank, into which the perforation in the front shell opens; the shank may be slightly expanded at its lower end.

The thread is passed from the under side of the fabric up the shank, round the bar, then down the shank, through the fabric, and so on. The fabric is drawn somewhat up the shank, and the edge of the shank is kept firmly against the fabric, the thread being thus "wholly preserved from the " action of the button hole."

Sometimes the bar is double, being made "of a piece of wire " doubled and inserted between the shells." Sometimes the *upper* shell is pierced with four or other number of small holes, and a correspondingly perforated disc is placed between the shells.

In buttons of non-metallic substances it is preferred to make the button and tubular shank in one piece; the bar may be passed through the shank or be inserted in the front of the button across the opening.

[Printed, 6*d*. Drawing.]

A.D. 1858, April 26.—No. 922.

LEE, Edwin Evetts.—"Improved modes of applying vitrifi-"able materials for the ornamentation of metal buttons, "clasps, and other articles of dress, and which said improve-"ments are also applicable to the ornamenting of gilt jewel-"lery, book clasps and mounts, also parts of lamp stands, "chandeliers, and other such like articles made in dies, or "moulded or formed in any other way." The articles are pierced in the desired shape, and the edge of the piercing is "afterwards slightly enlarged on the face side." The articles are put into the die in which they were formed or into a mould made for the purpose, and "crystal or opaque glass" is applied in a hot or semi-fluid state. The glass pressed in from the back "spreads itself on the other side to the clear form "of the die or mould."

Among the figures shown in the annexed sheet of drawings is one of a button "which exhibits the glass (which is tinted "blue) filling up the cavity of the shell and protruding "through the perforations in front, by laying the shell face "downwards into a proper die for that purpose."

[Printed, 10*d*. Drawing.]

A.D. 1858, May 4.—No. 991.

MEALL, Henri Lucien.—(*Provisional protection only.*)—"Improvements in spring fastenings suitable to be used for "dresses, brooches, and other purposes." A spring tongue is added to an ordinary dress hook "to prevent the eye or loop "through which the hook is passed when in use from acci-"dentally coming off the hook." If the hook is made of wire, the inventor prefers "to form the loops at the end of the hook "by which it is attached to the dress by turning the ends of "the wire round in directions opposite to those in which they "are usually turned to form these loops," so that at the end of the stem the ends "are bent away from each other" and "come together again after forming the two loops." Instead of cutting off the wire here, the ends "are carried on so as to "pass side by side up the stem until they abut upon the end "of the hook."

If the hook is stamped or cut out of sheet metal, the blank is shaped somewhat like a cross; the longer extremity is bent up into a hook; the arms form the loops for attachment; the head is bent over "to form the tongue for closing the hook."

The fastening of brooches is rendered more secure by adding "a spring tongue similar to that described for hooks to the "ordinary C catch by which the pin is retained;" for this purpose the wire at the lower part of the catch is continued "for a short distance in a horizontal direction" and is then bent back "to come in contact with the upper end of the "catch."

[Printed, 4*d*. Woodcuts.]

A.D. 1858, May 17.—No. 1100.

HILER, Selah.—(*Provisional protection only.*)—"An im- "proved method of coating or amalgamating iron with silver, "copper, brass, or other metals or alloys of metals." A sheet or bar or block of wrought iron is cleaned and heated, and while heated the brass or other metal is cast on to the surface or surfaces; "the union may be accelerated by the use of "borax or other flux." Or the coating metal may be united to the iron "while the latter is in a state of fusion."

The coated metal is rolled down to the desired thickness, and is then fit to be cut out or made up into any articles for which it is adapted, "such as buttons, stair rods, tubing, bells, "hinges, bolts, and other articles."

[Printed, 4*d*. No Drawings.]

A.D. 1858, May 24.—No. 1156.

EDWARDS, John and **LOVERIDGE**, Thomas.—(*Provisional protection only.*)—"Improvements in the manufacture "of buttons and other fastenings for articles of dress." This invention relates to double shell trouser buttons, and the improvements consist (1) in making the front shell so that the back shell may be brought over it and "thereby form a rim

" round the button ;" (2) in lacquering or coating with varnish parts of the button "to protect the metal from the action of " the atmosphere."

The inventors apply lacquer or varnish to ordinary trouser buttons and to other dress fastenings.

[Printed, 4*d*. No Drawings.]

A.D. 1858, August 4.—No. 1771.

BADCOCK, James.—(*Provisional protection only.*)—"Im- " provements in apparatus to be applied to ladies' dresses and " other articles of wearing apparel." The improvement consists in combining one of the customary apparatuses for looping up dresses "with a petticoat belt or band." This is effected "by attaching the looping-up apparatus to the upper " edge of the petticoat belt or band in place of to a separate " belt or band as heretofore."

[Printed, 4*d*. No Drawings.]

A.D. 1858, September 9.—No. 2046.

WRIGHT, Joseph, senior, and WRIGHT, Joseph, junior.— " Improvements in machinery and apparatus used for pre- " paring fabrics or materials to receive eyelet holes or fasten- " ings, and fixing eyelet holes, and in fastenings for stays " and other articles." 1. Machinery for punching holes in fabrics :—On each side of the bed die is placed an arm, turning on a centre, formed with a segment of a screw wheel near the inner end and carrying a pin near the outer end. Between the segments a screw works turning the arms and pins to or from the bed die ; it is so arranged "as to be capable of being " put into gear with the working parts of the machine that it " may be moved a step forward after every descent of the " cutting punch." These pins act as gauges for regulating " the distance the succeeding cuts shall be made from each " other ;" one "enters the cut or hole last made," and the one or the other will be used "according to the direction" in which the fabric is to be moved.

Pliers for punching holes in fabrics are made with pins or stops in like manner.

2. Machinery for fixing eyelets :—The bed die is secured to an arm projecting from the standard, so that "parts of the

" work may be under the arm" when an eyelet is fixing "in " another part of the work." The dies are "such as have " before been used, nor is there any novelty in the method " of actuating them."

Various modifications are described :—Sometimes "a move- " able plate which carries two lower dies" is used. Sometimes there are combined "two, three, or more upper dies" to work at different heights, one above the other, the standards being constructed with as many lower dies on projecting arms. Sometimes "three lower dies" are brought in succession under the punch by mounting them on a revolving block; arrangement is made "to prevent the nipples of the lower dies rising " up through the eyelets" and for feeding eyelets on to the nipples.

3. In stay fasteners, "where the holes or slots are cut in " sheet metal," a ring is applied "at one end," and "the " other end of the plate" is fixed (by preference) "by an eyelet " hole." The ring "turns on a sort of hinge joint and serves " to lock the stud to prevent it escaping from the fastener." If a strap is used, the fastener is made "in one piece of sheet " metal formed into three parallel lines, one of which is formed " with a tongue or projection to enter into an eyelet hole on " the strap;" it is fixed "by the middle bar," and the end of the strap "is passed under the outer bar."

[Printed, 2*s.* 6*d.* Drawings.]

A.D. 1858, September 29.—No. 2171.

OLD, George, and PENDLETON, Thomas.—(*Provisional protection only.*)—"Improvements in dress fastenings, and in " attaching dress fastenings to articles of dress." This invention relates (1) to a fastening for gloves and other articles of dress; (2) to constructing such fastenings "as fasten after the " manner of the ordinary hook and eye" in such manner that they may be readily attached to and detached from the articles which they fasten.

1. The fastening consists of two pieces of sheet metal, "each " having a form somewhat resembling an anchor." The arms of one piece "are bent a little upwards," and the arms of the other "a little downwards out of the plane of the sheet " metal." When the parts are attached to the glove, the arms of one piece engage in the arms of the other.

2. The loops by which the hook is attached are made larger than usual, and there is "an enlargement or double bow "between the said loops and the body of the hook." Cord or braid is sewn on the dress in the line in which the hooks are to be placed, leaving the cord "unsewn at the places" where the hooks are to be attached. The hook is inserted under the unsewn part, "the loops preventing it from passing "from under the cord in one direction, and the enlargement "or bow making a gentle pressure necessary in removing the "hook by drawing it back."

The hook "may have straight arms" instead of loops; it may be made of sheet metal, "in which case the loops are "situated in the same plane as the bent part of the hook."

The eye may be made so as to be attached in a similar manner.

[Printed, 4*d*. No Drawings.]

A.D. 1858, October 8.—No. 2240.

NICHOLLS, Alfred, and WALKER, Thomas.—"An im"proved spring hook, catch, or fastening," for "fastening "wearing apparel or for any other purpose." This improved hook is made of plate metal "stamped or cut out to the "required form in a flat blank." The ends of the blank are "turned or shaped so that one end shall overlap the other or "spring and thereby form an endless link or hook, which "cannot become unfastened by accident but requires the "spring to be depressed into an inclined plane to allow the "eye to be unhooked." The back end near the bend is stamped or cut out wider than the rest and perforated for attachment by sewing.

The hook may be made "in other manners, such as of wire "bent and arranged into the required form."

[Printed, 6*d*. Drawings.]

A.D. 1858, October 29.—No. 2422.

LEWIS, Lester John.—"Improvements in fastenings for "ladies' dresses and other such like purposes, as also in the "machinery for manufacturing the same." These fastenings (hooks and eyes) claim the advantage of "flatness of construc"tion;" they "lie in close contact when applied to dresses" and are not subject to "voluntary disengagement." The hook portion is "on the same plane with" the side bars, and "at "the spring the wire is planished or flattened down." The part of the eye which passes over the hook "is made more of "a circular shape," and is "so indented or planished," that when united with the hook the two are "flat and compact."

In the machinery a shaft carries fast and loose pulleys, a fly wheel (or wheels), and the cams required "for producing the "different actions and motions" for supplying and cutting off the wire, for shaping the hooks or eyes, and for "planishing, "indenting, marking, and delivering the same." A "planishing lever" works on a fulcrum which passes through "two projecting ears" on the bed and through the lever; "the extreme end of this lever stands above the main shaft in "connection with a cam which causes the lever to rise and "fall as the shaft revolves." On the bed "between the ears "and underneath the lever" are sliding pliers, the extreme end of which when drawn back "leaves a place for the wire "to be pushed forward by regular feed apparatus." As the shaft revolves, the pliers are pushed forward "into a corresponding part, which is actuated by a connecting rod placed "underneath the bed." The meeting of these pliers or parts "not only cuts off the wire to the proper length, but also "forms the hook or eye," at which time the lever is lifted and caused to descend on the hook or eye and "flatten, mark, and "indent the same." By a continuation of the revolution of the shaft the lever rises, and the pliers "will open and allow "the hook or eye to fall between them into a receiver." To give "the true form" to the articles "simultaneous lateral "pressure" is obtained from "two suitably formed levers "working horizontally on two perpendicular pins" fixed on the bed, the long end of each being forced out right and left "by horizontal cams also fixed on the main shaft;" springs keep the ends of the levers against the cams. The Specification contains a detailed description of the machine.

[Printed, 1*s*. Drawing.]

A.D. 1858, November 2.—No. 2437.

BEAVER, Louis.—(*Provisional protection only.*)—"An "improvement in sleeve links." The inventor attaches a spring fastening "beneath the ornamental plates or buttons of

" the sleeve link." The fastening consists of "a fixed loop or " link open at one end" and "a spring tongue opening in" wards" and closing the opening. When in use, "the tongue " will be pressed back, and upon coming into the button hole " it will close and fasten the sleeve together and also secure " the link upon the sleeve."

[Printed, 4*d*. No Drawings.]

A.D. 1858, November 2.—No. 2441.

BROUGH, Nehemiah.—"Improvements in buttons and in " the means of attaching them to garments, which said means " is also applicable for other purposes." The shank of the button is of metal and "somewhat of the form of the metal " portion of a percussion cap." The head part is spread out and "loosely held or confined" between the front and back shells. This arrangement "allows the button to freely move " around the shank" and "constitutes the principle" of this part of the invention.

In attaching the button to a garment, a hole is pierced through the fabric with a stiletto (not punched out of the fabric); the shank is passed through the hole; a metal washer is put over the shank on the inside of the fabric, and the end of the shank is opened out by pressure.

The patentee describes two presses for opening out the tubular shank :—One is composed of (1) a standard connected to a base on which are formed lugs for screwing the press to a table; (2) a bolster on which is placed a die corresponding with the front of the button; (3) a stiletto regulated by a gauge or guide; (4) a bolt working vertically and held up by a helical spring against a cam formed on a handle; (5) "a false " nose" sliding vertically on the lower end of the bolt and arranged so as to press the washer down on the fabric and leave perfectly free the part of the shank which is to be opened out by the end of the bolt.

The other press consists of (1) a stand to which an upper jaw is fixed; (2) a lower jaw pin-jointed to the upper jaw and lengthened into a handle which is held in position by a spring fixed on the upper jaw; (3) a stiletto formed by a projecting end of the pin whereon the lower jaw works; (4) a cap at the front end of the upper jaw; it holds a helical spring which acts on (5) "a four-pronged fork which surrounds the closing-

"in tool, and which tool is also secured to the jaw;" this fork presses down the washer round the shank "before the "lower jaw rises." The button, lying in a die formed for it in the jaw, "is brought up for the operation of the closing-in tool."

[Printed, 8*d*. Drawing.]

A.D. 1858, November 4.—No. 2469.

FRIEDMANN, Adolf.—(*Provisional protection only.*)— "An improvement in bracelets, necklets, and rings. This invention relates to the means of fastening such of these articles as are "formed of or with a strap or straps, bands or belts."

The strap is "run through a slide or clip (one or more) from the centre of which "there rises a threaded pin"; a button or stud is screwed down on the pin and fixes the strap. Or the pin may be connected to the button or stud and may be made to fix the strap by being "screwed down through the upper "part of a slide upon it."

[Printed, 4*d*. No Drawings.]

A.D. 1858, November 16.—No. 2572.

PARENT, Alfred Isidore Honoré.—"An improved manu-"facture of buttons, and the apparatus employed therein." This invention relates to the description of buttons called four-hole buttons composed of two metal shells and a disc of card, cotton, or other fabric between them.

Strips of metal are formed into "continuous bands" by turning over the ends of each strip into a kind of hook, engaging the hook in the end of the strip next to it, and then flattening the ends down. The band is put into "a cutting "and stamping machine," in which are "hollow concentric "punches" driven from eccentrics so as at each stroke "to "cut a disc from the continuous band, depress the centre or "body thereof into a matrix, and leave a raised edge or rim "all round." The feed of the band is regulated "in accord-"ance with the stroke imparted to the punches" by means of a lever, a connecting rod, ratchet wheels, and feed rollers.

The cupped discs have put into them a disc of fabric and then a disc of metal; they are then placed in recesses formed in an endless belt and subjected to the action of a finishing machine. They are here brought under a punch "which sets "and fixes the blanks in movable shaped rings held in a re-"volving platform supported under the endless belt." They are next "brought between punches and matrices, whereby "the three surfaces are compressed, dished, and perforated" with the required number of holes. They are finally shaped between another punch and matrix, and are then "pushed up "into a cylinder" from which they fall into a receptacle provided for them. "Pins for clearing out the holes in the buttons "may be fixed in these cylinders." The buttons on leaving this machine are quite finished and ready for polishing, silvering, &c.

Each machine is fully described in the Specification.

[Printed, 10*d*. Drawings.]

A.D. 1858, November 19.—No. 2615.

EDWARDS, JOHN.—(*Provisional protection only.*)—"Im-"provements in the manufacture of trowser buttons. "The improvements consist in employing "prepared paper or other "suitable material" in the manufacture, and in "colouring the "same in the way that steel pens are coloured." The paper is arranged so as to form the front of the button; or the front of the button may be perforated, and the paper be placed between the back and front so as to show through the perforations.

[Printed, 4*d*. No Drawings.]

A.D. 1858, November 19.—No. 2623.

FELTON, ALFRED.—(*Provisional protection only.*)—"Im-"provements in fastening buttons and studs to dress and "other articles." The buttons, &c. are made with a hollow stem; this is passed through the article to which the buttons are to be fastened and "turned down and spread out in the "form of a lip or flange." This may be done with or without the intervention of a collar, and it is preferred to cut the edge of the hollow stem "into equal parts before turning it down." For fastening buttons, &c. to cloth it is better to use a collar, but in fastening them to leather "the prongs formed by notch-"ing the edge turned down" will "enter the leather and form "a secure fastening."

Sometimes the buttons are formed "with holes in the centre "through which metal sockets like eyelets are inserted." The sockets are passed through the article of dress, &c. "and are "turned over and spread out" either with or without a collar, and with or without notching.

[Printed, 4*d.* No Drawings.]

A.D. 1858, November 24.—No. 2667.

HESS, Richard Henry.—"A new manufacture of articles, "parts of articles, parts of machinery, surfaces, and ornamental works from talc and other silicates of magnesia." Buttons are among the articles mentioned in the specification. "Certain silicates of magnesia, such as talc, steatite, &c.," are reduced to powder and pressed into suitable moulds, colouring matter being added if required. Other substances may be added to the silicates, "such as kaolin, alumina, lime, "carbonate of barytes and felspar." The article having been formed in the mould is taken out and baked or fired. "The "addition of a small proportion of glass to the powdered "materials before pressing it into moulds assists the fusing "operation." The colouring may be imparted by mixing oxides of metal, carbon, &c. with the powder before pressing it into moulds or by using agents such as organic colouring substances after the article is pressed and fired, "or otherwise as "desirable."

[Printed, 4*d.* No Drawings.]

A.D. 1858, November 30.—No. 2730.

SCHEIDEL, Auguste Emil Clemens.—(*A communication from P. F. Gouda.*)—"Improvements in fastenings for belts, "braces, garters, books, portemonnaies, portfolios, pocket "books, invoice, writing, and cigar cases, reticules, bags, and "other similar articles or purposes." On one side of the article is fixed a "holding piece" consisting of "a clip, clasp, "small case or recess, slotted or with an opening on each "side, or a double plate so connected as to have a groove on "each side." On the other side of the article is attached (preferably by an elastic) "a frame or loop formed with "cheeks, feathers, or tongues, or cut away at the inner sides "*so as to* leave parts projecting inwards."

The projections "enter or slide into the slots or grooves in "the holding piece" and thereby fasten the article.

The invention admits of slight modifications; these are explained in the Specification. In all cases there may be a knob "for more conveniently handling" the moveable part of the fastening.

[Printed, 8*d*. Drawing.]

A.D. 1858, December 11.—No. 2841.

HALL, William Foley, and DUTSON, Thomas.—(*Provisional protection only.*)—"Improvements in fancy buttons "for ladies' and gentlemen's wear." The front shell is perforated; the edge of the perforation is of "a vandyke or "serrated form;" the points, being bent or pointed outwards, puncture the covering fabric and project through it far enough to clip and hold a centre ornament. The ornament "may be "varied as good taste or fashion may direct" and may (or not) be set within a metallic ring or cup.

Sometimes, instead of perforating the front shell, the metal is so cut as "to allow parts of it to be readily bent up;" these parts "being slender and pointed" puncture the fabric "and "afford the same result as before described."

The points which come through the fabric are burnished or otherwise finished.

[Printed, 4*d*. No Drawings.]

1859.

A.D. 1859, January 12.—No. 90.

BOUCHÉ, Philippe.—(*Provisional protection only.*)—"Improvements in the means used for mechanically raising up "the gowns of ladies." A girdle is worn under the gown and two cords are suspended from it. On the inside of the skirt four tapes "are attached in an upright direction;" each has formed in it three or four eyelet holes through which the cords are passed. The end of each cord extends a little lower than the lowest eyelet hole, and has attached to it one or more balls or other contrivances of sufficient weight to keep the cords distended. The cords may pass over wheels or pulleys fitted on a steel or whalebone band, which is secured to the edge of the girdle, or through eyelet holes formed therein.

For working the cords "rings, knobs, or such like appliances " are fitted, one at the middle of each cord and so as to come " in such a position in front as to be prominent or render their " situation apparent in order to be readily handled."

[Printed, 4*d*. No Drawings.]

A.D. 1859, January 20.—No. 179.

BENT, Joseph.—"Improvements in clasps or fastenings ap- " plicable for belts, garters, and other purposes." The object of this invention is to construct clasps in such manner that when they are in use "the parts shall remain perfectly in " contact without gaping or displacing themselves."

If the two parts are round at the connecting place, one part is made with a central opening and with four flanges projecting inwards from the opening; the other with a globular part, an indented neck, and a back plate cut round "and then bent at " right angles and attached by soldering to the globular or " centre part." When the globular part is passed into the opening, two of the flanges "fit between the bottom edge of " the globular part" and the back plate; the indented neck passes into the opening between the flanges ("which prevents " the parts turning around when together"); and the other two flanges "also form a support for the centre when the " connection is completely made."

If the parts are " of a square or angular form," no provision is required to prevent them from turning round.

In some clasps a hook is soldered on the back of the front plate; it is passed over "a raised loop" on the back plate, " forming a simple but secure and firm connection which not " only confines the parts firmly together but prevents any " lateral or loose action." This admits of modifications which are described in the Specification.

In others, a square plate passes into an opening in a square frame; ears pierced out of the plate and bent down clip projections on the inside of the frame, and when "pulled back in " a nearly parallel direction" effect "a complete and secure " connection."

[*Printed, 8d.* Drawing.]

A.D. 1859, January 21.—No. 199.

EDWARDS, John.—(*Provisional protection only.*)—"Im-"provements in the manufacture of buckles." The only information given is that a loop is added to square or whole-frame buckles so that "the strap can be attached to the buckle "without having a hole cut in it."

[Printed, 4*d*. No Drawings.]

A.D. 1859, February 7.—No. 340.

LYONS, Abraham.—(*Provisional protection only.*)—"A "pocket protector." This protector consists of a strip of steel or other similar material shaped and fitted to the pocket in such manner as "to be hinged together at one end and admit "of being opened and closed at the other by means of a hasp "or similar fastening."

[Printed, 4*d*. No Drawings.]

A.D. 1859, February 15.—No. 421.

PATERSON, John.—"Improvements in brace buckles and "loops, and in braces." In brace buckles a piece of metal descends from the lower bar of the buckle and is turned up towards the bar, "so as to form a pipe or tube for the chain or "catgut or cord carrying the tabs to run in."

In braces, or rather brace ends, the improvement consists "in attaching leather tabs to tab chains by means of eyelets "and a piece of metal attached to each end of the chain" by a ring and an eye. The lower part of the plate is placed between the tab and a lining, or on the tab without a lining; the whole is secured by eyelets.

[Printed, 6*d*. Drawing.]

A.D. 1859, March 2.—No. 548.

VALDA, Johan.—(*Provisional protection only.*)—"Improve-"ments in studs and other like fastenings for dresses, belts, "or other purposes." This fastening consists of two separate parts; the one a mushroom or other suitably shaped head having a hollow stem with the bottom open and formed on the inner side of the edge with a collar; the other a button head with a hollow shank provided inside with "one or more spring catches which "expand laterally out of the side." When the shank is thrust into the stem, the catches expand, "abutting "against the under side of the collar" and preventing the parts from separating. The springs are acted upon "by a "stud pin or pins or other mechanical equivalent, which may "be so formed as to constitute a portion or portions of the "ornamental face of the fastening."

[Printed, 4*d*. No Drawings.]

A.D. 1859, March 2.—No. 552.

JONES, Frederick John.—(*Provisional protection only.*)—"An improvement in buckles and clasps." The improvement consists "in the employment of a compass" as an ornament in buckles and clasps. Either "the bowl of the compass" is formed in the same piece with the metal, forming part of the rosette of the buckle or clasp, and the edges of the bowl are turned up to form the frame for the compass glass; or the bowl and glass are fixed in the article "by other suitable "means."

[Printed, 4*d*. No Drawings.]

A.D. 1859, March 8.—No. 601.

BOOTH, Adam, the elder, and BOOTH, Adam, the younger.—"Improvements in machinery or apparatus for making or "manufacturing tags for laces." The driving shaft, mounted in the framework, carries at one end fast and loose pulleys, near the other end a cam, and between them three eccentrics. The strips of metal from which the tags are to be made "are "brought from their coils and placed in the grooves" of circular feeders "having an intermittent motion of the exact "length required for the size of the tag." The feeders are fixed to spindles "having at their ends bevil wheels gearing "into other bevil wheels" on a shaft; the spindles work in holes in two bars, the holes in the outer bar "being oblong," so that the spindles can be influenced by springs and "keep "the feeders firm upon the strips." On the last-mentioned shaft is a toothed wheel gearing into a toothed wheel on a third shaft whereon is fastened a ratchet wheel. The ratchet is operated on by a catch which works on one of the eccentrics. The toothed wheels are "change wheels, their diameter being "varied according to the desired size of the tag."

The strips pass from the feeders through slots in a "vibrating bar; thence they proceed to be cut by "stationary "cutters" and "sliding cutters" fixed to a slide which has a to-and-fro motion imparted to it by means of two of the eccentrics on the driving shaft and connecting rods. The pieces cut from the strips "are supported at the right moment" by a "vibrating bar or gauge." Benders connected to the slide "move forward at the same time as the sliding cutters" and force the tags upon stationary punches; they have "corresponding indents to allow the holes to be made, thus "shaping and punching the tags." The tags are pulled off the punches by parts of the benders and fall into a receiver, "the vibrating gauge having been moved back to allow them "to do so." This gauge "works in eccentric bearings which "can be raised or lowered" as required, the position being determined by an "index plate."

The tags are polished by passing them through a hopper into a revolving drum, whence they pass through another hopper into a revolving sieve.

The machine and its working, as well as a modification of its arrangement "by reversing the action of the cutters," are fully described in the Specification.

[Printed, 10*d*. Drawing.]

A.D. 1859, March 26.—No. 761.

HASELTINE, GEORGE.—(*A communication from Edwin H. Perry.*)—"Improvements in the manufacture of small "metallic chains." These chains are made from strips of sheet metal; the links are "domed or cup-shaped" having "a circular body with a central perforation" and usually three arms. The pattern of the chain is determined "by the "form of the edge of the link used." All the necessary operations for making a chain are performed by a single machine; but the blanks may be cut out and domed before being placed therein.

The machine is mounted on a table, and the various motions are obtained by means of cams on the main shaft. "An "ordinary feeding device" (when used) is placed at the back of the machine. A strip, placed in fingers between guides, is inserted into nippers which "give the required intermittent "movement to the metal." A punch "cuts the required

" blank and forces it through the die upon a carrier," which " has a perforation of the form of the blank." The blank is transferred from the carrier to a former, " where the body of " the link is struck into the required form." The link is then thrown out of the former " into the grasp of an upright spring " tube " in a position to be formed into a chain. " While the " link is coming to the tube," the tube is rotated by means of a ratchet wheel and pawl " such a part of a circle as neces- " sary to make the arms of each link interlock with those " of the succeeding link." A second link being deposited on the tube, slides " move forward and turn over the arms of the " under link." The tube is " a simple piece of steel; its upper end is conical; apertures are cut in it about half an inch long and wide enough to admit the free passage of the slides; it is " split down about one inch and a half," and " the end is " brought to a spring temper." An " adjustable contracting " collar " on the end of the tube helps to keep the chain in position while the arms are being bent over, so that the chain " may be woven more or less compactly." Sometimes the links are deposited on the tube by the use of " a separating " former or die in which to strike up the links, the tube being " situated immediately below;" when the required form has been given to a link, " this die opens, and the link falls upon " the tube."

The inventor describes at length his machine and its working; he claims,—

1. Bending over the arms of each link " against the inside " of the dome of the next succeeding link."

2. Conveying the links after they are domed from the die to the spring tube.

3. Grasping and holding the links by means of the spring tube and its collar.

4. Bending over the arms by means of slides, which " receive " a reciprocating motion " through a cam, connections, and a disc plate whereon the slides are mounted.

[Printed, 1*s.* 8*d.* Drawings.]

A.D. 1859, April 16.—No. 952.

BARROW, HENRY.—" A new or improved fastening for fastening trunks, boxes, and articles of dress, and for such other " *purposes* as the same is or may be applicable to." This fastening may be used as a substitute for the ordinary buckle or hook and eye. It consists of two parts, namely a button or knob having by preference a slightly conical head, and a hollow metal shell or eyelet having at its front a hole somewhat larger than the button head and a piece of vulcanized india-rubber or other elastic material across the hole and perforated with a hole of about the size of the neck of the button. The button being forced through the india-rubber into the shell is securely held by the contraction.

The elastic is attached to the shell by placing it in front thereof with the holes concentric, putting a disc on the elastic, and turning up the edges of the disc and elastic over the back of the shell.

The shell is sometimes dispensed with in straps and the like; a hole large enough for the button to pass through is made in the strap, and a piece of perforated india-rubber is fixed against the back of the hole.

[Printed, 6*d*. Drawing.]

A.D. 1859, April 21.—No. 1001.

DAWSON, Thomas, and AVERY, John.—(*Provisional protection only.*)—"Improvements in pencil cases, watch seals "and keys, toothpicks, and other like articles of jewellery, "lockets, penknife handles, portemonnaies, and other like "articles." These articles are constructed so as to allow of space for a number of postage or receipt stamps or tickets "to "be wound in and out by a mechanical contrivance that shall "have a propelling power, regulated by the number of stamps "to be wound in or out."

If the article has a case or handle, the invention is applied thereto; in lockets, portemonnaies, and such like articles it is applied to the hinges or clasps or other suitable part. In a pencil case for instance,—

The stamps are inserted "through a slit made in the exterior "of the drum or cylinder in which they are wound and act." The mechanism for winding the stamps in and out is a longitudinal spring "fitted to a centre pin fastened to one end of "the pencil case and through a hole at the opposite end of "the drum which is detachable, and through which a pin "revolves to work the stamps in and out." The spring is not riveted to the centre pin, "but is slotted at the ends and made "to slide *on two* small pins, so that the pressure of the

" stamps reduces the curve towards a straight line." Or the spring may be arranged to work from a straight line to a curve. A tape measure, instead of stamps, &c. may be combined with the articles.

[Printed, 4*d*. No Drawings.]

A.D. 1859, April 23.—No. 1015.

EDWARDS, John.—(*Provisional protection only.*)—" Improvements in the manufacture of buttons." This invention relates to a method of forming the holes in sewn-through buttons. " A hollow well " is sunk in the middle leaving a projection or other stop round the bottom on the inside. A bar of wire is forced down to the bottom of the well, " thereby forming " the holes by which the button is sewn on to the garment."

[Printed, 4*d*. No Drawings.]

A.D. 1859, April 30.—No. 1083.

TOUSSAINT, Joseph.—" A new process of modelling & " moulding for galvanoplastic." One part of this invention relates to the employment of " gold filagree work and trinkets " and " their reproduction in galvanoplastic." The following ingredients are melted together, " 2¼ lbs. of yellow wax, 10½ oz. " of resin, 14 oz. of yellow or red ochre, 1 lb. 1½ oz. of potato " starch, 3½ oz. of lard ; " the quantity of lard is increased in winter, that of the wax or resin in summer. Before the composition is quite cold, it is worked up " till it becomes a very " elastic paste ; " it is then " made into little sticks and rolled " into plates about $\frac{1}{16}$ in. thick with a wet roller upon a board " also wetted with a sponge." The article is laid on one of the plates, and the wax is cut with a needle into " the same " form and dimensions as the contour " of the article. Before applying the article a light coating of a fatty composition (consisting generally " of 14 oz. of common oil and 3½ oz. of " lard ") is laid on " to prevent adherence." The article (if it requires such treatment) is then " grouped " and " fixed in the " form to be moulded by means of pins and needles."

The moulds are stove dried for the space of 12 hours or more, according to the thickness of the plaster ; they are then thrown in their heated state " into a bath of pure boiling " tallow or stearine," where they remain for from 10 to 20 minutes ; the fatty matter on their surface is then removed by *bathing them* in boiling turpentine. The moulds are rendered

" metallic before putting them in the galvano-plastic baths " by coating them with a mixture of "2½ drams of nitrate of " silver dissolved in 5 drams of distilled water, and 5 drams of " spirits of wine ; " they are then put into the bath "in the " same manner as if they were blackleaded."

[Printed, 4*d*. No Drawings.]

A.D. 1859, May 6.—No. 1144.

FREARSON, John.—" New or improved fastenings for wearing apparel and for such other purposes as the same are or " may be applicable to." These fastenings (hooks and eyes) are intended (1) "to effect the junction of parts of dress or " other articles by a neater and less bulky fastening," (2) "to " prevent or diminish injury to the fastening by pressure as " in ironing or mangling," (3) "to effect a more secure fasten- " when the parts fastened are slack."

The outer end of the eye "is hooked, that is, raised out of " the plane in which the other parts are situated."

Three hooks are described, varying in shape and construction :—In one the beak is made open, that is, "of a wire bent " into a bulb shape." All the parts "are in the same plane," the body of the hook "being formed by the wire returning on " either side of the neck of the beak" and terminating in needle holes "nearly in a line with the bulb of the beak."

In another the beak "is raised or elevated above or depressed below the body." The beak is open, that is, "of a " bulbous figure or lozenge shape," and each of its sides "is " nearly parallel with and so near to its side bars" that the sides of the beak and the side bars "somewhat pinch or press " upon the eye" during the insertion of the bulb. This hook may be used with a flexible loop or a worked eyelet hole.

The third has a closed beak elevated above the plane of the body. The side bars are of a bulbous figure at the outer end and then "parallel or nearly so with the centre of the beak." If this hook is to be used with an ordinary eye "which has all " its parts in the same plane," the beak and side bars are shaped "so as to offer a slight pressure upon the eye when being fastened and unfastened."

Slight modifications of the foregoing are described in the Specification.

[Printed, 8*d*. Drawing.]

A.D. 1859, May 10.—No. 1169.

WILKINSON, WILLIAM and WHITLEY, CHARLES.—"Im-"provements in buttons and fastenings for garments, harness, "and other similar purposes, and in the method of securing "the same." The shank of the button is a stem slotted so as to form two or more prongs, or it may be composed of two or more wires "springing from the centre of the inner part of "the button." This shank is thrust through a hole in the article to which the button is to be fastened, and the prongs or wires are bent over with or without the addition of a washer.

[Printed, 6*d*. Drawing.]

A.D. 1859, May 20.—No. 1240.

VALDA, JOHAN.—"Improvements in stud fastenings, and a "system of ornamenting and adapting belts, cravats, ribbons, "draperies, and other articles to stud fastenings." The stud is made in two separate parts; the back part consists of a head and a hollow shank open at bottom and formed with a collar or rim projecting on the inner side of its edge. The front part consists of a head or ornament and a hollow shank which will fit into the shank of the back part. In the smaller shank are spring catches (one or more) "which expand laterally out of "the side or sides" and abut "against the under side or sides "of the collar or rim," thereby preventing the pieces from separating when the smaller shank is thrust into the larger one. The catches "are acted upon by a stud pin or pins (or other "mechanical equivalent), which may be so formed as to "constitute a portion or portions of the ornamental face of the "fastening."

Several modifications are described :—In one the front part is formed "with a solid shank and with a short projecting arm "in the slide, which takes into an L-shaped groove" inside the shank of the back part. An "expanding spring" in the hollow shank keeps the solid shank "steady in its position."

In another, a chain, bolt, or other equivalent, is passed through corresponding perforations in both shanks.

In another, the smaller shank is surrounded by a coiled spring so connected thereto "as to continually press it toward "*the bottom*" of the larger shank.

In another, right and left handed bolts are pressed outwards by springs, which surround the bolts "and are enclosed in the "head of the stud."

The reader will find other modifications in the Specification; all are based on the principle of one shank sliding into and held in another."

Draperies and other articles mentioned in the title are adapted to these stud fastenings by making in them eyelet or button holes so as to form bows, folds, or festoons "in com-"bination with one stud at one time."

[Printed, 8*d*. Drawing.]

A.D. 1859, May 23.—No. 1260.

BRIERLEY, JOHN HENRY, and OLD, GEORGE.—(*Provisional protection only.*)—"A brace buckle." The lower portion of the buckle is formed into a hook. To one side of the hook is attached a small spring. A portion of the spring passes through a slot "to the inside of the hook" in such manner that "upon slipping a ring of iron or other material upon the "hook it comes in contact with the spring and so displaces it "that the ring passes forward to the place intended for its "reception." The spring returns to its original position thereby securing the ring.

[Printed, 4*d*. No Drawings.]

A.D. 1859, May 26.—No. 1300.

PATRICK, HUGH WILLIAM.—"A new substance or material "to be used in lieu of ivory and other like substances." The patentee employs his new material in the manufacture of many articles, among which he mentions buttons, medallions and ornamental jewellery.

The material is composed of (either separately or combined in suitable proportions) "amber, Canada balsam, the Aus-"tralian gum kowrie, potato flour or fecula," mixed with "meerschaum, paper pulp, calcined bones, fluorate of silicia, "sulphide or sulphurets of mercury (vermilion) or of other "metals, chlorides of zinc or other metals, alkaline prepara-"tions, asbestos, fluxed or fritted colors, or finely-powdered "pumicestone, sulphur, india-rubber, or similar gums."

The combinations may be effected "by reducing the gums "to solution or 'hard bodies' or precipitates, or by the appli-

" cation of heat;" where solutions are adopted, the solvent depends on "the particular substance to be treated;" the substances before they are combined with the solution are to be pulverized "to enable them to mix readily." They may also be "mixed with the gums whilst they are in a state of " fusion."

When thoroughly mixed the whole is evaporated to a thick paste and may afterwards be rolled out, cut, or moulded. " Where shaped or moulded the new material is hardened by " the application of heat and will bear a very high polish."

[Printed, 4*d.* No Drawings.]

A.D. 1859, May 26.—No. 1309.

WRIGHT, William.—(*Provisional protection only.*)—" Improvements in fastening shirts, collars, and other articles of " wearing apparel." The inventor makes a stud in two parts; the front part carries a screwed stem, the back part is a threaded disc. The back part is put underneath the shirt, and the stem is screwed into it. This stud requires only "a very small " aperture" to be made in the shirt, "sufficient to admit the " stem through."

[Printed, 4*d.* No Drawings.]

A.D. 1859, June 7.—No. 1391.

GREENFIELD, John.—(*Provisional protection only.*)— " Improvements in fastenings for dresses and other like " apparel." The object of this invention is "to keep the " upper parts of dresses (especially of children) in their " proper position without the use of cords or ribands as is the " common practice with sleeves of children's dresses."

The inventor makes a spring "by bending a flat strip of " suitable metal in half or thereabouts, having projections or " risers in the interior to prevent slipping when once at- " tached;" by means of this "the frock and petticoats are " kept together (the latter from rising), and the sleeves not " put at all out of shape."

The outer surface of the spring may be ornamented, and the inner surface may be covered with any suitable material to prevent friction, &c.

[Printed, 4*d.* No Drawings.]

A.D. 1859, June 30.—No. 1554.

GUEYTON, Alphonse. — (*Provisional protection only.*)— "Improvements in enamelling articles of jewellery, applicable "also to other similar purposes." Two plates of metal or other material are soldered, riveted, or otherwise fastened together; one has a plain or even surface; the other is perforated by stamping or other means in the form of the required pattern. The perforations "form recesses in which the enamel "may be placed, leaving the reliefs or exposed portions of the "perforated plate to be burnished, engraved, or chiselled."

The effect may be varied "by placing the enamel upon "the reliefs, and burnishing, engraving, or chiselling the "cavities."

The shape which the article is "definitely to assume" may be given to it "either before or after the perforation."

[Printed, 6*d*. Drawing.]

A.D. 1859, July 9.—No. 1639.

ILIFFE, Charles.—"Improvements in the manufacture of "buttons." Five improvements are claimed, two relating to sewn-through buttons, and three to Florentine or covered buttons.

1. The shell is made with "an annular groove or depression," and the disc of linen which covers the front is held between the closed-in edge of the shell and the top of the groove. If both sides of the shell are covered, the back covering is secured at the same time and by the same means as the front covering.

2. Such buttons are filled-up "with cloth or other soft "material through which a needle will readily pass."

3. A back shell with an annular groove or depression is used instead of the ordinary "back plain shell," and sometimes "a convexity" is made at that part where the button is to be sewn on; the convexity may be "pierced or unpierced."

This convexity constitutes the fourth improvement; if it is pierced, the needle passes through the back as "in sewing "on buttons having flexible shanks;" if unpierced, it "serves "as a guide for the needle."

5. A ring is used having its inner and outer edges "raised "parallel to one another so as to constitute between the said "edges and bottom of the ring an annular trough." The

fabrics forming the front and back of the button are secured at the same time "by the closed-in edges of the said ring." The space between the fabrics is filled with paper or other substance, and the middle of the back fabric "is made with a "boss or shank."

[Printed, 6*d*. Drawing.]

A.D. 1859, July 26.—No. 1737.

HINKS, JOHN, and WELLS, GEORGE.—"An improvement "in or a substitute for the hook of the ordinary hook and eye "dress fastening." This substitute is made from either sheet metal or wire; it may be used with an ordinary eye, or an eyelet, or a loop.

If it is made of sheet metal, a blank is cut out having a body of an ornamental form and one end somewhat resembling the letter L; the body is pierced with holes for attachment; the end is doubled or turned upon the body so as to form a hook "with a transverse bar or projection" joined to "the extremity of the hooked end." If it is made of wire, the wire is bent into the shape of a hook with an end "having the construction herein-before described."

In introducing this hook into an eye, it must be "twisted "until it is in a plane at right angles to that of the dress;" when the bar has entered the eye, the hook "assumes the "same plane as the dress," and however loose it is, it cannot become accidentally detached from the eye.

[Printed, 6*d*. Drawing.]

A.D. 1859, July 29.—No. 1759.

WRIGHT, JAMES.—(*A communication from M. Bresson.*)— "An improved method of raising or drawing up the skirts of "gowns or dresses." A waistband of linen, cloth, or other substance, is fastened round the corset or chemise a little above the hips by india-rubber ends and catches or hooks. To the waistband are secured folds of stuff enclosing a band of whalebone whereto are fixed pulleys or eyelets. A cord, passing through the pulleys or eyelets and through eyelets or loops fixed vertically to ribbons on the skirt, enables the back of the skirt to be raised by putting a button or loop on the middle of the cord (or at the junction if it is preferred to use two cords).

Other two bands of whalebone, enclosed in folds of stuff and provided with pulleys or eyelets and a cord or cords and a button or loop, are fastened to the waistband in front in a slanting position for the purpose of raising the front of the skirt. The cords are kept stretched by balls of lead at their lower ends.

[Printed, 6*d*. Drawing.]

A.D. 1859, August 29.—No. 1964.

EDWARDS, JOHN.—(*Provisional protection only.*)—"Im-"provements in the manufacture of buttons." The improvements relate to sewn-through buttons. In those made of "non-metallic substances" a hole is formed in the centre, and a metal bar is inserted "to form the holes." In those made of metallic substances a hole is pierced in the centre of the back shell; an eyelet is inserted "to cover over the cutting "edges;" a metal bar is put in to form the holes; and the front shell is brought down to the bar to keep it in. In metallic buttons "of high raised sections" it is preferred to fix the bar to the inside of the back shell instead of bringing down the front shell. These buttons may be made either with or without "a projecting tubular shank." The inventor claims also the coating of metallic sewn-through buttons "by means "of electro-plating."

[Printed, 4*d*. No Drawings.]

A.D. 1859, August 29.—No. 1966.

BAUGH, BENJAMIN.—"Improved machinery or mechanical "arrangements for raising or giving form to articles formed "of sheet metal, such as knobs, thimbles, ferules, and parts "of umbrella and parasol furniture, button shells, and other "such like small articles." The machinery described is applicable "for cutting out and forming shells for Florentine "buttons," but "with slight modifications" will produce the various (or similar) articles named in the title; it will "cut "out and form six at a time, or more or less, as convenient," by an "adjustment of the tools to their respective beds" and by passing the metal "between self-acting feed rolls." In the formation of these shells, &c. the patentee applies "the "principle of an annular pressure plate or ring" as described in Letters Patent "granted to William Hetherington on the "31st day of August 1852, No. 14,251."

The main shaft carries fast and loose pulleys, a fly wheel, and a pinion which gearing into a cog wheel causes a cam shaft to revolve; "on the extreme end of this shaft" an eccentric pin moves up and down a connecting rod. The lower end of this rod by means of suitable gearing gives motion to an upper and a lower feed roll. Vertical rods, attached at their upper ends to the glands of eccentrics on the cam shaft, have their lower ends fixed to a piece whose under side carries the bolster "for receiving the concentric forming "tools." The "pressure plate holder and guide, which "extends from side to side," derives its motion from being connected by four rods to a cross head, which has openings in it for the free passage of the vertical rods and "in the "centre of the top side" projecting lugs for carrying a friction roller; the roller works against a cam on the cam shaft and "held to its work by a clip or ring." The bolster carrier, the pressure plate holder, and the cross head, each clip vertical guide rods. A bed, "standing behind the lower feed roll," or "its internal part, is intended to be held and set in any "convenient way and to be removed with the forming tools "and replaced by others as desired."

The action of the machinery is described. "When the tools "return by the revolution of the machine, the shells formed "will fall off and drop on an inclined plane" and slide down into receivers.

This arrangement of machinery enables the patentee to avoid all necessity "for sinking dies" and "for repeated "annealings," to cut out and form button shells at one operation, and to produce them at a rapid rate, advantages gained principally from "using pressure in counter distinction to the "concussive force of a blow."

[Printed, 2*s*. Drawings.]

A.D. 1859, September 5.--No. 2024.

BARRE, Jean Baptiste Henri Honoré Raymond, and BARRE, Jean Baptiste Marie Ernest.—"Improvements in cutting "out or engraving metals and their alloys." The patentees *apply their* invention to the decoration of "gold and silver

" work and jewellery, whether real or imitative, seals," &c. &c.; they describe it in cutting out a design on a plate of copper. The process "consists chiefly in covering (by the aid " of printing) the parts to be left intact with a fatty or resinous " body impenetrable to nitric acid, and leaving bare the parts " which are desired to be acted upon by the acid."

The design is drawn on a lithographic stone; the parts intended to be in relief are drawn in black, the other parts being left white. When the design "has been bitten in on the " stone as ordinarily practised by lithographers," the stone is washed with volatile oil to remove the ink, after which it is damped and inked with a mixture of equal parts of "strong " printers' mordant" and "copal oil varnish" and "about " one-tenth part of ordinary black printers' ink." A proof is taken off on unsized paper and is transferred to the copper-plate. The plate is powdered with a composition of "four-" fifth parts of a resinous substance and one-fifth part of wax, " stearine, or other similar substance;" it is then carefully dusted to remove the powder from the parts which are not covered with ink, and is afterwards heated "until the substance " which covers the design adheres perfectly to the metal." The plate is "repowdered with resin only," until a sufficient coat-" ing has been produced to resist the action of the acid " perfectly for a lengthened period;" it is then submitted to the action of nitric acid in the usual way.

[Printed, 4*d*. No Drawings.]

A.D. 1859, October 4.—No. 2241.

MENNONS, MARC ANTOINE FRANÇOIS.—(*A communication from Louis Auguste Mangin.*)—(*Provisional protection only.*) —"An improved 'porte-jupe' or apparatus for suspending " dress skirts and other objects." The body of this porte-jupe is made of a band of metal "bent in the middle so as to take " the shape of a pair of sugar tongs, curved outwards near " the lower extremities, the points being recurved inwards." A slot is cut in the upper part of each branch to about one-third of its length, and into each is fitted "the end of a " metallic **V** piece, passing through a stop on each side, and " hinged at the apex which faces the open end of the " branches." The ends of the piece when inserted "are " turned over so as to form a pair of ears at the outside."

When the porte-jupe is to be closed on the skirt, the V piece "is drawn upwards by its ears which run in the slots;" the branches are thus brought together and hold the skirt firmly between them.

Instead of a hinged V piece the closing may be effected by means of a small bar, one end of which is fixed to one branch while the other passes through a slot in the other branch "and "is hinged to a small excentric lever, the depression of which "on the outside locks the jaws on the object placed between "them."

In either arrangement the porte-jupe is suspended from a cord which passes through the bend at the top.

[Printed, 4*d*. No Drawings.]

A.D. 1859, October 18.—No. 2381.

HILL, Caleb.—(*Provisional protection only.*)—"An improved fastening for stays and other purposes." The fastening consists of a hook fixed to one busk and an eye fixed to the opposite one. A stud "is adapted to the back of the "hook in such a manner as to cover the hook and eye and "prevent them from being seen." This contrivance, says the inventor, "adds considerably to the neatness of the fastening "and improves the appearance of the stay."

[Printed, 4*d*. No Drawings.]

A.D. 1859, November 4.—No. 2508.

BULLER, George Nicholas.—(*Provisional protection only.*) —"An improved mode or method of ornamenting articles "composed wholly or partially of jet." This invention applies to bracelets, brooches, pins, ear-rings, studs, sleeve-links, buckles, and similar articles; it consists in setting or inlaying "the precious stone known as Turquoise" on the "surface of the jet" in any convenient manner so as to form patterns or devices.

[Printed, 4*d*. No Drawings.]

A.D. 1859, November 10.—No. 2554.

EDWARDS, John, and **WRIGHT**, John Skirrow.—"Improvements in the manufacture of buttons." These buttons, whether made of metal, wood, or horn, or of metallic and non-metallic substances combined, have metallic shanks. The shank is a loop of wire which is secured to the back of the button in such manner that it is "brought level or nearly level " with the back, thus allowing the button, where necessary, " to be sewn close to the garment." A groove is formed in the back "leading from each side of the back to and under the " shank;" this "allows the free passage of the needle in " sewing on." If the button is made of a combination of metal and wood or horn, the front shell is of metal, and the back (of wood or horn) is made to fit into it. The advantage claimed is that the shank "cannot be bent down or broken off " by being pressed."

[Printed, 6*d*. Drawing.]

A.D. 1859, November 18.—No. 2611.

BRIERLEY, John Henry.—(*Provisional protection only.*)—"A belt or band fastener." A plate of metal pierced with two holes is attached by means of eyelets to one end of the belt. To the middle of the plate is fixed "a wire loop made thinner " at one part than the other," and "within a short distance of " the metal plate" there is attached "one end of a chain to " the belt," the free end of the chain carrying "a pistol " or other device or design." Holes of such shape as to allow the passage of the loop are cut in the other end of the belt.

The belt is fastened by passing the loop through one of the holes and then passing "a certain portion of the pistol or other device or design over "the thinner part of the wire loop down " until it rests upon the thicker portion."

[Printed, 4*d*. No Drawings.]

A.D. 1859, December 19.—No. 2891.

SMITH, John.—"Improvements in the manufacture of composi- " tion jewellery and ornaments, and in cases for jewellery, photo- " graphs, and for other similar purposes." All these articles are made from a mixture of shell-lac, ebony dust, and according to the colour required charcoal or ivory black or lamp black or asphaltum, or rouge, boxwood dust, or other colouring matters. A thoroughly mixed composition of 1 lb. of shell-lac dissolved by heat, an equal quantity by bulk of ebony dust, 3 oz. of black asphaltum powder, and 3 oz. of ivory black, or charcoal powder or lamp black, produces "an intense black." 3 oz. of brown asphaltum (instead of the black) and about 1 oz. of rouge mixed with the shell-lac yields "a chocolate or brown tinted com-" position." Boxwood dust gives a light colour as well as strength, and greens, blues, and other colours are obtained by colouring matters in required proportions. Streaked or veined compounds are made by twisting or rolling together masses of different colours.

Lumps of the mixed ingredients are put into dies of the required forms, and each article "is completed by pres-" sure."

In making cases and other "double-sided articles," each side is moulded separately and afterwards connected by hinges or rivets. Locks, &c. can be added as in cases of wood or papier maché.

[Printed, 4*d*. No Drawings.]

A.D. 1859, December 24.—No. 2947.

SMITH, John.—"Improvements in the manufacture of but-" tons and other dress fastenings." This invention relates to the production of these articles from a plastic material not hitherto used for such purpose, and to the process of preparing the material.

The ingredients used are "shell-lac, ebony dust, and char-" coal," with the addition of powdered pigments. For "an" intense black composition," 1 lb. of shell-lac dissolved by heat on a flat iron slab is mixed with "an equal quantity by" bulk" of ebony dust, 3 oz. of finely powdered black asphaltum, and 3 oz. of ivory black or powdered charcoal or lamp black. For a chocolate or brown colour, brown asphaltum and 1 oz. (more or less according to the tint required) of ordinary rouge must be substituted as colouring matters. Suitable colouring matter must be used for green, blue, &c.; for light colours dust of boxwood, and for a still lighter tint a white pigment.

The ingredients are to be thoroughly amalgamated "until" the mass shall appear homogeneous," unless a streaked or veined material is required; this appearance may be produced by twisting or rolling together masses of different colours; heat *is to* be used in the mixing.

Lumps of suitable size are put into dies and subjected to pressure. "The composition readily cools by contact with " the dies, so that the article in a finished state may be almost " immediately removed."

[Printed, 4*d*. No Drawings.]

A.D. 1859, December 28.—No. 2962.

ROSTAING, Charles Sylvester.—"Improvements in com" bining and mixing gutta percha with mineral and vegetable " substances capable of altering its quality in such a manner " as to produce hard, resistent, unalterable, and imputrescible " compounds diversely coloured." The patentee fills nearly a page of his Specification with the names of the articles which may be made from the combined gutta percha and the purposes for which it is applicable. In the list he mentions artificial coral and ivory and buttons, but no specific combination is described for such articles.

"The preliminary preparation" of the gutta percha is "the " partial or complete purification" thereof :—To effect this, it is boiled in soft water, flattened into thin sheets, washed in cold water, boiled in a solution of soap-wort, again formed into thin sheets, again washed in cold water, and dried. The complete purification is obtained by further boiling it for several hours in a "lie of soda rendered caustic by lime or a " mixture of soda and caustic potash," again flattening it, again boiling it in soft water, again flattening it, again washing it in cold water, and finally drying it.

In the Provisional Specification we are informed that "more " tenacity" may be obtained by mixing with the prepared gutta percha "cotton, hemp, or flax," and that "Burgundy " pitch, shell-lac, asphalte, concentrated tar, separately, or " combined may be admixed with the gutta percha according " to the uses for which the compound is destined."

The annexed sheets of drawings show views of the "rotatory " machine for mixing processes."

[Printed, 1*s*. 4*d*. Drawings.]

1860.

A.D. 1860, January 18.—No. 134.

SCHUBERTH, Johann.—(*Provisional protection only.*)—"Improvements in nails and similar articles, and in preparing "materials for the production thereof, and of buttons and "various other articles to which the same may be applicable." The heads are made "of porcelain or other clay or earth, or of "cement, or of wood chips or shavings, or wood waste," by means of pressure in moulds, glazing, &c. Colour may be applied afterwards or may be mixed with the material while in a soft state. A recess is left in the head for the admission of the shank or pin, which may be fixed therein by riveting, soldering, or cementing.

The inventor gives two formulæ for a cement; the one composed of "plaster of Paris, lime water, white of egg or "glair, and pure oil; the other of" "unslacked lime, white "of egg, glair or albumen, and slacked lime or glue, which "can be liquified by pure oil, preferring to take two parts "unslacked lime to one part glair, and one part slacked "lime."

He obtains "considerable whiteness" and "excessive hard-"ness" by employing for "the burning operation" a peculiar flame "consisting of the gas evolved from beech wood, com-"bustion being assisted by free draughts of cold air."

[Printed, 4*d*. No Drawings.]

A.D. 1860, January 21.—No. 154.

SCOTT, John William.—"Improvements in plates for attach-"ing buttons to garments and other articles, in button shanks, "and in buttons." The plate is a metal disc having an oblong slot in it sufficiently wide and long to admit a button shank. The piece cut out to form the slot is separated from the disc on three sides only and is turned back to serve as a tongue. The disc "is indented crosswise of the slot," so as "to form "sockets for the arms or cross bars of the shank to rest "in."

The shank is either "a double wire" or "a solid pin or "stem with a head," or "a wire having the doubled middle "*inserted* in the button and the two ends turned up to form a "hinge," by which to hold on to the sides of the disc in the sockets. The shank is passed through the slot; the disc is turned half round so that the projecting arms of the shank rest in the sockets; the tongue is pressed down, thereby securing the shank in its place and yet allowing the button "to play," as the arms "will move in the sockets." The tongue may be "a piece of metal projecting from the side of "the disc" and "turned over inwards" to secure the shank. Two or more tongues may be used, "meeting in the middle and thrown back right and left; or the tongue may open at the side. If the shank is of leather or cord, it is passed through the slot; a bar is slipped through it; the ends of the bar lodge in the sockets, and the tongue is pressed down on the bar.

Buttons are made "with a hollow metal back" in which is cut "a tongue from the side towards the centre." The head of the shank is inserted through the slot made in cutting out the tongue, and is slipped down "to the centre of the back "plate;" the tongue is then pressed down, and the shank "is secured in its proper place, forming a ball-and-socket "movement." Or a slot may be made, the head be slided down through the slot, and the sides be pressed together.

[Printed, 6*d*. Drawing.]

A.D. 1860, January 24.—No. 175.

ILIFFE, Charles.—"Improvements in double shell buttons."

The patentee claims two improvements, the first in double shell buttons having at the back "a neck raised from the back "shell," the second in making the needle holes of double shell buttons formed "with or without necks."

1. The front and back shells "have each a hollow or semi-"tubular bar." When the shells are closed together the bars "come face to face with one another," and form a hollow bar. This bar may be made "to lie parallel with the bottom of the "neck," or it "may start from the edge" of the neck and "project to the required extent" into the neck. This bar "may be formed from one shell only with the same or nearly "the same effect." In modifying this part of his invention the patentee prefers "to make the bar on the front shell," the edges of the bar being turned inwards so as to make it

" nearly tubular in form." Sometimes the neck and bar are formed " of one piece of solid metal dropped into the shells."

2. In cutting out the holes in the blank he does not " detach " the pieces or flaps," but leaves them " as flaps on the inner " edges of the holes." These edges being turned or doubled back " form rounded edges which are incapable of cutting the " thread." Sometimes " the edges of the bar of the front " shell " are made to clip or close round the bar of the back " shell or round a piece of wire inserted for that purpose."

[Printed, 8*d*. Drawing.]

A.D. 1860, February 13.—No. 387.

LANDSBERG, Edouard.—" Improvements in buttons, studs, " or other similar fastenings for wearing apparel or other " purposes." This fastening consists of an ordinary button, stud, hook, &c. to be attached to one end of a belt or other article of dress, and a button or stud acting on the principle of a spring measuring tape and fastened to the other end.

The button or stud which contains the mechanism is a small box formed of two overlapping shells having between them space for a coiled spring, a barrel, and a connecting tape or braid. One end of the spring is secured to a spindle, the other to the inside of the barrel, which encircles the spring and has the tape wound round it. The end of the tape passes through an opening in the rim of the shell and is provided with a knob to prevent the tape from being entirely drawn into the interior of the shell.

The shape of the box may be varied. The box may be made of any suitable material; and the spring may be of india-rubber.

[Printed, 8*d*. Drawing.]

A.D. 1860, March 9.—No. 640.

SHELDON, Catherine. — " Improvements in ornamenting " spurs and other metal portions of saddlery and harness " furniture, and which said improvements are also applicable " for ornamenting other fancy articles made of wrought or " cast metal." This invention relates to a method of " setting, imbedding, or inlaying artificial or natural gems " generally.

Two tools are required, each capable of being fixed in " a " lathe, or brace, or bow, or any other revolving instrument."

One is of such shape that, when a plate or other object is brought into contact with it, it will by revolving form therein a cavity having a vertical rim thereon. When this tool is removed and the other put in its place, the plate or other object with the gem inserted into the cavity is brought into contact with the second tool, and the rim "is caused to con- "tract and grasp the gem." The second tool "burnishes as "well as forms the setting."

[Printed, 6*d*. Drawing.]

A.D. 1860, March 13.—No. 668.

WRIGHT, James.—(*A communication from Philander Shaw.*)—"An improved method, means, and process of treat- "ing wood, so that it becomes so changed as to be well "adapted for uses for which it is naturally unfit." Wood, when treated in the manner described by the patentee, will be found valuable as a cheap substitute for several materials, for example, for "leather in the heels and soles of boots and "shoes" and "as a cheap substitute for horn to be made into "buttons."

Blanks of wood are submitted to the action of high-pressure steam in a closed vessel; "by the condensation of the steam" there is obtained "a vacuum in the pores of the wood." There is then admitted into the vessel "in a fluid state, oily "or resinous or other waterproof material, or any metallic "or mineral salts, or other preservative chemical, or any "desired dye;" and if it is desired to have the matter forced through the wood, any required amount of pressure is applied to the contents of the vessel. When the blanks are taken out of the vessel, any moisture thereon and "any solvent of the "injected matter" are driven off by heat. The blanks are now compressed into moulds (by preference heated); the "moveable parts" of the moulds are locked, "so that the "wood cannot recover any of its original bulk by virtue of its "elasticity;" and the moulds with their contents when removed from the press are submitted to a temperature of from 200° to 500° Fahr., by preference in ovens.

The blanks and the moulds may be shaped to the article intended to be made, or they may be of any convenient size and form, and the blank can be shaped after compression.

[Printed, 4*d*. No Drawings.]

A.D. 1860, March 23.—No. 749.

VIGURS, Henry. — "Improvements in the treatment of "paper or cardboard, such paper or cardboard being used for "cards, wrappers, or boxes for exhibiting and holding small "articles usually sold on cards or in boxes, as also in the form "of such boxes and wrappers, and the manner of attaching "specimens of contents thereto." The articles exhibited are "pens and pen holders, buttons, hooks and eyes, and a variety "of small fancy articles." The paper or cardboard is improved by incorporating "strengthening threads" with the material during its manufacture. Sometimes strengthening threads are stretched over a sheet of pasted paper and secured to it by another sheet.

If the article is to be exhibited on a card or wrapper, the paper is "cut close on each side of the strengthening cords for "forming the narrow loop" in which the article is held. A flap "may be laid over in front of the card and secured or tied "up," and the specimen article may be exposed through a hole pierced in the flap.

In boxes the specimen of the contents is exhibited on the top, which is made with a raised bed for the reception of the specimen. The specimen is held in place by either a cross clip or one or more elastic rings. If the specimen has a point, the raised bed may be made "with a set off or projection" for protecting the point.

For protection of the specimens in packing the cards and boxes are made with raised edges.

Several methods of constructing the boxes are described in the Specification.

The strengthened paper is suitable also for bands for wrapping around "hoisery and other such fancy goods."

[Printed, 1*s*. Drawing.]

A.D. 1860, March 24.—No. 765.

HAYWOOD, Herbert.—"Improvements in machinery for the "manufacture of buttons and other similar articles." In this machine four driving shafts run loosely upon the main shaft until brought into connection by clutches which cause toothed wheels on the shafts to gear into horizontal bevel wheels; the wheels "in the fourth division" are "plain buff wheels covered

" with leather." The upper ends of upright spindles (corresponding in number in each division to the number of tools employed) pass through the bevel wheels; the plain horizontal wheels slide "in a keyed bed." Four spindle frames "move " vertically between the standards of the frame" and are furnished with wedges to regulate the position, &c. The vertical motion of the first three frames is obtained from cams driven by a "back shaft;" that of the fourth frame from a cam driven by another back shaft, "for as the spindles in this " division have to ascend and descend four times (if four holes " be desired in the blank) to one ascent and descent" of the other frames, this shaft revolves four times as fast as the other. Each spindle carries a chuck for holding the tools, in the first division "cutters to cut out the blank from the material," in the second and third "slightly toothed cutters to produce a " smooth surface on the bottom and top faces of the blanks," and in the fourth "drills to drill the requisite number of " holes."

The raw material is placed on a slide rest, which (by means of gearing described in the Specification) receives longitudinal, side, or cross motion, or "any other suitable change motion," until the material is cut up. Each blank is then placed in a frame "carrying as many holders as there are spindles," and the frames are placed in the second division "whilst the " spindles are on the ascent." These spindles carry tools " for bottoming the blanks." After the bottoming the blanks are reversed, put into other holders, and placed in the third division "for the facing or turning the other or front side." The same holders with the frame are then taken to the fourth division for the drilling. Polishing spindles, "similar to " those carrying the cutters but furnished with brushes " instead of cutting tools," complete the button.

The various connecting parts, &c. of the machinery are detailed in the Specification.

[Printed, 1*s.* 8*d.* Drawings.]

A.D. 1860, April 2.—No. 842.

POWELL, HENRY BUCKWORTH. — (*Provisional protection only.*)—"A moveable stud or button." This stud is made in two parts, "a small shank of one screwing into the other." Both parts may be ornamented "so as to be able to change

" either side at pleasure." The surfaces which screw together with the fabric between may be serrated or milled, so that when the parts are screwed tightly together, the fabric " will " enter the serrations or milling " and prevent the stud from " unscrewing."

[Printed, 4*d*. No Drawings.]

A.D. 1860, April 2.—No. 843.

BROOMAN, Richard Archibald.—(*A communication from Henry Dollier.*)—" Improvements in buttons." These buttons can be attached without sewing. They are made in two separate parts ; the one constituting the button proper is a disc, " the central part of which is concave or cup-shaped and is " open at bottom ;" the other is a conical or cylindrical tube with a projecting flange at the bottom. The tube is passed through a hole in the material into the concave part, and the top edges are pressed open and burred down upon the inside thereof.

Or the button proper is made with a tapering or parallel tube which is continued down upon the concave part ; the other part is a flat disc with a hole through the middle.

Sometimes a washer is placed " between the cupped part " and the fabric " to prevent the fabric from being torn.

Sometimes the parts are connected by screwing. Sometimes the upper part is fitted with a shell or ornamental top ; in short " the invention is susceptible of numerous modifica- " tions without departing from its essential features."

[Printed, 8*d*. Drawing.]

A.D. 1860, April 5.—No. 865.

BROWN, William Tulford, and JEFFERY, Walter.—(*Provisional protection only.*)—" A more convenient and " effectual method of attaching and securing brooches and " such like articles, and for improved fastenings to be used " therewith, and for other purposes." The pin is detached, and the brooch is made with two loops or staples. The head of the pin is a tube " enclosing a concentric circular disc or ring ;" the stem is fixed to either of these parts, " the other part being " made to revolve." The pin is inserted into the fabric ; one loop is passed over the point ; the other is admitted through an opening made in both parts of the head and is secured "by "the circular motion" of the revolving part.

Modifications of the head are described:—"The exterior is "made with a projecting chamber" in which the loop is secured. Or "an interior projection" forms part of the tube. Or a spring and bolt fitted inside secure the loop.

[Printed, 6*d*. Drawing.]

A.D, 1860, April 5.—No. 875.

SMITH, JOHN.—"Improvements in the manufacture of "buttons and other dress fastenings." This invention is stated by the patentee to be an improvement on the one for which he obtained Letters Patent, dated December 24th, 1859, No. 2947. The objects of the present invention are (1) to obtain "greater density, tenacity, lightness, and delicacy of tint" than could be produced with the materials named in the former Specification, and (2) to combine with or imbed in the composition shells or mounts of metal or other material which will prevent the article produced from fracture and will allow of more varied ornamentation.

The ingredients now employed are "lac either stick, seed, "shell or in any other form containing equivalent chemical "components, asphaltum, sawdust, ivory black, oxide of manganese, coke dust, and powdered charcoal;" other vegetable fibres may be used for sawdust, and colouring matters are added as required. Finely powdered black asphaltum and ivory black or charcoal powder or lampblack produce "a very "intense black;" brown asphaltum and rouge a chocolate or brown tint; dust of boxwood a light colour, and barytes added thereto a still lighter tint.

The materials are to be "well amalgamated under heat," and whilst the composition is in a plastic state, it is "to be pressed "in suitable dies and thus moulded into any form that may be "desired." A streaked or veined composition requires less amalgamation, or it may be produced by twisting or rolling together two or more masses of different colours. Greater density is obtained by the addition of mineral substances; greater tenacity by means of "vegetable fibre other than wood "dust;" and a light and strong composition by mixing paper pulp with the other ingredients.

Some figures in the annexed sheet of drawings represent buttons composed partly of composition and partly of metal forming either a front or a back shell; others "exhibit a few "varieties of clasps" showing some of the ways in which the composition may be employed "with or without the aid of "metal." The composition may be inlaid with any ornamental material.

[Printed, 8*d*. Drawing.]

A.D. 1860, May 19.—No. 1234.

DAVEY, SAMUEL.—"Improvements in fastenings for attaching buttons, studs, brooches, or other ornaments and "fastenings to articles of dress, and for other uses." To the backs of buttons, &c. are affixed "two projections in the form "of hooks placed side by side;" the points are "in opposite "or nearly opposite directions" so that the parts of a dress will be securely held together by passing one of the hooks through one part, and the other hook through the other part.

Or the parts of a dress may be united by means of a fastener "formed by two hook-shaped instruments or ends" with the points as before-mentioned, and either sharp to pierce the fabric or blunt to pass through eyelet holes.

[Printed, 6*d*. Drawing.]

A.D. 1860, May 19.—No. 1235.

LEES, JOSIAH. — "Improvements in the manufacture of "swivels, hooks, and rings for attaching and securing watches, "chains, or jewellery, parts of which improvements are applicable to key-rings, earrings, and other similar articles." These swivels and rings are made with "a lock or bolt fastening" actuated by a coiled spring; they are formed of tubular metal, "the circuit of the bow not being complete," and the vacant space is filled up by a bolt. This bolt is provided with a spring at its back which drives it into the opposite part of the bow, and a stud on the heel of the bolt, working in a slot above the spring, furnishes the means of opening the swivel or ring. A collar above the upper end of the spring acts as a stop to the spring.

This invention admits of several modifications:—The bolt *may be* worked without a spring by causing the stud to engage in a cross slot like a bayonet lock. Or the bow may be completed "by a tubular bolt tapped with a female screw and "working over a male screw upon the upper part" of the swivel; this modification when applied to a ring requires "a "small portion of the ring, and the part used for the bolt" to be made straight instead of on the curve. Other modifications are described in the Specification. A watch key may be attached to the bow or to the loop at the top of the swivel, "the loop being double-jointed to allow of its being turned "down out of the way when the key is used."

The invention is applicable to the connecting ring of an earring (the ear not requiring to be pierced;) but "as the "end of the bolt and the meeting end of the ring" would be too harsh to be borne by the ear, the end of each of these parts "is softened or rounded off into a pad or cushion."

[Printed, 8*d*. Drawing.]

A.D. 1860, May 29.—No. 1327.

HUGHES, Hesketh. — "Improvements in machinery for goffering, fluting, shaping, embossing, and connecting together "lace, ribbons, and other like materials, parts of which improvements are also applicable to the shaping and corrugating of metals." The patentee divides his invention into 5 parts, 3 of which relating to lace, &c. have been abridged in the division of the present series entitled "Head Coverings." The fourth and fifth parts relate to the shaping and corrugating of metals, and one figure in the annexed drawings represents the pattern former used for shaping metals "such as trellis "work, button shanks, &c.," whilst another figure shows a piece of wire bent somewhat into the shape of a series of hourglasses, so that button shanks may be made therefrom by cutting through the narrow portions.

In each machine two endless chains carry each a set of pattern formers, the upper set fluting or corrugating one side and the lower set the other side of the material. The chains revolve round pinions, and in the machine for corrugating, &c. the pattern formers are "made in a piece with lugs" which are linked together "to form the chain." The shafts for communicating motion to the chains are geared together. Tables "extend across the machine;" they are fitted with set screws, "by which means the chains are stretched firmly into "their bearings." The pattern formers "carry levers attached "to their sides." The metal "is led between the chains from the table, and as it passes between the pattern formers "becomes corrugated or otherwise shaped according to the "form of pattern former."

[Printed, 1*s*. 4*d*. Drawings.]

A.D. 1860, June 21.—No. 1503.

SMITH, John.—"Improvements in the manufacture of composition jewellery and ornaments, and in cases for jewellery, "photographs, and for other similar purposes." The patentee considers this present invention to be an improvement on the one for which he obtained Letters Patent bearing date December 19th, 1859, No. 2891. He is now able to obtain "greater density, tenacity, lightness, and delicacy of tint in "colouring" than before.

One lb. of shellac or lac in any of its known forms suitable for the purpose is dissolved by heat and mixed with an equal quantity by bulk of ebony dust. The colouring matter is introduced at this stage; namely, for a very intense black, 3 oz. of finely powdered black asphaltum and 3 oz. of ivory black, or charcoal powder, or lampblack; for a chocolate or brown tint, 3 oz. of brown asphaltum and about 1 oz. of rouge; for green or other dark tints, any suitable colouring matter; for light colours dust of boxwood; for a still lighter tint "an "intense white in the shape of barytes or any other suitable "colouring" is added to the boxwood dust. If a streaked or veined composition is required, two or more masses of different colours are twisted or rolled together.

Lumps of the composition are placed in suitably shaped dies, and the articles are produced by pressure.

Density is increased by the addition of mineral substances; tenacity by the addition of vegetable fibre other than wood dust; and lightness by the admixture of paper pulp with the ingredients.

[Printed, 4*d*. No Drawings.]

A.D. 1860, July 5.—No. 1624.

WALKER, Thomas.—(*Provisional protection only.*)—"An "*improved* collapse detector pocket for protecting articles on

" the person." The mouth of the pocket is so formed that a " hand cannot be thrust into it and withdrawn without being " detected by the wearer."

The pocket may be made of any material. Two strips of whalebone, steel, or other elastic substance are fixed in the mouth in such manner as to cause the mouth "to collapse " when not in use;" they "can be used without any trouble " of fastening or unfastening."

The inventor reserves the right of making the mouth-protector of one piece only.

[Printed, 4d. No Drawings.]

A.D. 1860, July 7.—No. 1643.

NEWMAN, James.—"Improvements in the manufacture of " hooks and other similar dress fastenings." The first improvement relates to the "ordinary or swan-bill hook;" the the back or stem is curved so as to form a spring, thereby preventing the eye from accidentally escaping.

The second "consists in an improved form of spring clasp;" a disc of metal is turned up so as to form a spring hook; a stud fastened to the point of the hook passes through the disc "at or near its centre and behind the beak" of the hook; the eye when engaging with the clasp depresses the stud, which "resuming its normal position by the action of the " spring" prevents the eye from accidentally escaping.

The third and last consists in covering the front shells or face plates of belt or cloak clasps with silk or other woven fabric. The shell is flanged all round; an eyelet is "punched " up from the centre;" the fabric is put on and secured by turning down the flange upon the edges thereof; and the front and back shells are connected by passing the eyelet through a hole in the back shell and "turning the eyelet down " upon it."

[Printed, 8d. Drawings.]

A.D. 1860, July 10.—No. 1664.

SPEIGHT, George.—(*Provisional protection only.*)—"An " improved means of protecting watches and other small " portable articles from being stolen from the person." A short chain, cord, or "equivalent attaching agent," carries a swivel at one end and a bar at the other. The swivel is attached to the watch, and the bar is passed through a hole in the pocket, the hole (preferably surrounded by an eyelet) being only large enough to admit the bar "endwise." A stud, small plate, or "equivalent contrivance" may be used instead of a bar.

[Printed, 4*d*. No Drawings.]

A.D. 1860, July 11.—No. 1667.

TROTMAN, Thomas.—(*Provisional protection only.*)—"An " improved dress fastening." This fastening consists of a wire "doubled in the same manner as for an ordinary hook, " the double part forming a kind of prong on which an eyelet " or loop may be placed." The ears for holding this fastening " are doubled backwards in the direction of the prong," and " being in the same plane and sewn flat upon the article of " dress keep the prong flat down thereon and prevent any " tendency to its rising and falling over." The whole being in the same plane, "the liability to cut the dress in mangling " or ironing" is avoided.

Instead of doubling the wire "this fastening may be other- " wise formed."

[Printed, 4*d*. No. Drawings.]

A.D. 1860, July 24.—No. 1785.

LE RICHEUX, Lewis. — (*Provisional protection only.*)— " Improvements in the means of attaching buttons or studs " to articles of clothing, or other similar articles, and in the " buttons or studs to be adapted thereto." The buttons or studs are so constructed that eyelets or tubes can be fixed to them and form part of them, thereby dispensing with "the " ordinary flexible shanks."

The buttons or studs are fastened to articles of clothing, &c., by passing the eyelets or tubes through the articles and afterwards expanding them "in the usual way."

[Printed, 4*d*. No Drawings.]

A.D. 1860, July 28.—No. 1842.

CARPENTER, Samuel Alfred.—An "adjuster for adjust- " ing the backs of waistcoats and trousers, which said adjuster " may also be used as a substitute for the fastenings ordinarily " *employed* for fastening gloves, garters, and belts."

This adjuster is "a light rectangular frame," by preference of metal and somewhat longer than the breadth of the band to which it is applied. Across the frame are three bars parallel to the longer sides of the frame, and at each side is a tongue. The two outside bars are in the same plane as the sides, but the middle bar "is raised out of the plane."

To adjust the back of a waistcoat, &c., two bands are required; one carries at its outer end a metal loop; the free end of the other passes under the nearest side of the frame, over the three bars, under the farthest side of the frame, through the loop, and returning is secured to the middle bar. The length of the latter band is adjusted by sliding the adjuster along the band by aid of the tongues or flaps attached to the tongues.

For gloves or garters a smaller adjuster is used.

[Printed, 6*d*. Drawing.]

A.D. 1860, August 4.—No. 1894.

LANCELOTT, JAMES.—"Improvements in machinery or "apparatus for the manufacture of small chains, and also in "the manufacture of such chains." The patentee makes his chains from links of sheet metal "by forming the base of each "link into a geometrical figure, and by bending each arm "longitudinally at the same angle as one of the outer angles "of the base, so that a cross-bar or increased breadth on the "extremity of the arm of the next preceding link shall when "bent down bear against the angular sides of two of the arms "of two of the next succeeding or adjoining link." Each link is usually made with three arms.

On the bed of the machine are uprights, one carrying the fulcrum pins of the levers required, others the driving shaft whereon are the cams for actuating the levers. To one lever is linked a plunger having two male dies attached to its lower end; these dies "are simply rods," one at its lower part "corresponding to the form suitable to the blank of the chain "to be made," the lower end of the other "corresponding to "the shape of the chain to be made;" the upper portion of the last-named die is "a trifle smaller in diameter than the "lower portion." A rod rises and falls freely within each die. Another lever has pinned to it a plate to which the last-named rods are attached. A collar working on the lower part of the last-named die is attached to the lower end of the plate by a rod, which also connects to the plate the rod sliding within the last-named die. A third lever (which is in a horizontal position) is connected by an adjustable bar with a slide. A bar attached to the slide "works under a female die," having "a conical interior" and corresponding in form to the first-named male die. The slide bar "has a die fitted in it;" this die is "of cylindrical form and is allowed to turn within " the slide bar;" its upper face "is recessed to correspond " with the face" of the first-named male die, and "vertically " within the die" it is of the "hexagonal form of the link to " be swedged or formed." In this die is a rod, "the upper " end of which is provided with vertical spurs or projections;" these "are at the centre of the face of the die," and "serve as " guides." On the lower end of the die with the conical interior is a boss resting on a spring; to the under side of the boss is attached a swedge "formed of three arms projecting " from a cylindrical shank;" and over the die is placed a cap perforated to allow of the passage of the first-named male die. Within a block (placed on the front part of the bed) and underneath the slide is a plate having in it an opening "formed of " six radial slots and a polygonal centre corresponding with " the form" of the last-named male die. A short distance below the plate and in the block is another piece, having on its upper surface a hub wherein are three radial grooves for the reception of three clamps. These clamps are "rectangular " bars having each a notch in its under side;" springs bear against the outer ends, and the inner ends "are notched to " form two or more faces according to the form of the chain." The clamps "grip the chain and sustain it while receiving the " pressure necessary to connect the separate links as they are " applied in succession to the chain already made, and to " release it and allow of its descent during the progress of " manufacture."

The other parts of the machinery, modifications of certain parts, and the process of manufacturing a chain, are described at length in the Specification.

The patentee claims (1) the last named (or forming) male die "in connection with a rotating or partially rotating " die;"

(2) "the decreased diameter of the upper portion of the "forming die;"

(3) the constructing the die with a rod "with or without "shears or projections;"

(4) "the clearer rod and collar, either or both applied to "the forming collar;"

(5) the clamps in connection with the swedge;

(6) the guide plate in connection with the swedge;

(7) the swedge when constructed "to bend or clinch the "arms of the links and at the same time keep the arms of the "uppermost link in proper position, so that the latter may "readily receive the succeeding links;"

(8) the modified arrangements, in which the forming die "moves axially in order to deposit the links in their proper "position."

[Printed, 1*s*. Drawings.]

A.D. 1860, August 29.—No. 2082.

EDWARDS, John, and ILIFFE, Charles.—"Improvements "in the manufacture of buttons." These buttons are composed of a face of pearl or other costly material and a substantial back of bone, horn, wood, or other suitable substance, "thereby producing a thicker and more useful button than is "possible from the single substances."

The two parts are riveted or cemented together and pierced with holes for attachment to the garment. Sometimes the parts are united by tubular shaped rivets or eyelets; and sometimes a flexible shank is formed by placing a piece of cloth between the parts.

[Printed, 4*d*. No Drawings.]

A.D. 1860, September 15.—No. 2249.

BARNWELL, Stephen, and ROLLASON, Alexander.—"Improvements in combining and mixing certain solutions of "pyroxylene with animal, mineral, and vegetable substances, "by which its quality is altered in such manner as to produce "hard, resistent, adhesive, plastic, or resilient compounds "and articles unalterable in their nature and varied in colour, "which said compounds in a state of solution may also be "advantageously employed as paints or varnish." For the manufacture of pyroxylene the patentees prefer to use "com- "mon rags of any description, plain or coloured." The material is submitted for from 20 to 24 hours to the action of "the mixed acids, nitric, and sulphuric."

The acids are drawn off, and "the bulk is then to be "thoroughly and evenly mixed and boiled, then analysed, "and the loss of strength ascertained;" the loss is to be made up by the introduction of fresh acids, "when they may "be re-used."

A very useful description of the same article is obtained "by submitting fibrous and other matters containing cellulose "to the action of mixed acids of such modified strength and "temperature that they will be only partly converted into "pyroxylene;" this forms a kind of half-stuff.

The pyroxylene and the half-stuff must be freed from acids and dried "before advancing to the further processes."

According to the use to be made of the compound, some of the following ingredients are mixed with the pyroxylene:—Oils, essential, animal, vegetable or mineral; gums, resins, balsams, tar, pitch, bitumen, cements, wax, tallow, grease, caoutchouc and gutta percha; ivory and bone dust, powdered bark, farinaceous and amylaceous substances, starch and dextrine; pigments and bronzes; chloroform, bisulphide of carbon, ether, alcohol, anhydrous basic salts (that will in any way combine with it), iodide of potassium and cadmium, and oxides of metals for imparting colour.

The applications of the compounds in a state of solution or in a plastic state are very numerous, "far too numerous to be "particularly classified;" they may be used for buttons and for jewellers' and goldsmiths' moulds.

[Printed, 6*d*. No Drawings.]

A.D. 1860, September 17.—No. 2256.

ZYSEL, Francis.—(*Provisional protection only.*)—"Improvements in the construction of studs or fastenings for "shirt fronts and other articles of dress." This stud is made in two separate parts, each provided with projections and "recesses, springs, or other similar appliances." The parts are united "by simply pressing" them together. As the parts when placed in their respective sides of the shirt front "may remain there so long as the article is in use," the shirt front is less liable "to creasing or soiling" in fastening or *unfastening* the parts.

[*Printed*, 4*d*. No Drawings.]

A.D. 1860, September 27.—No. 2343.

BROWN, William Fulford, and **JEFFERY**, Walter.—(*Provisional protection only.*)—"A more convenient and "effectual method of attaching and securing brooches and "such like articles, and for improved fastenings to be used "therewith and for other purposes." The pin is detached, and the brooch is made with two loops or staples. The pin having been inserted into the article of dress, one loop is passed over the point of the pin, and the other is secured to the head of the pin, "which must be formed with some such "contrivance as the following":—

1. The head of the pin "may be formed into a loop," over which is riveted "a sliding case" kept shut "by a spring "within it." For the shape of the loop and case see the first four figures in the annexed sheet of drawings.

2. The head may consist of a tube "enclosing a concentric "circular disc or ring." The stem of the pin may be fixed to either of these parts, the other part "being made to revolve." An opening is made through both parts for the admission of the loop, which is secured "by the circular motion" of the moveable part.

3. The tube of No. 2 may be made "with a projecting "chamber" in which the loop is secured by the revolution of the disc or ring; or

4. An interior projection may form "part of the exterior "tube," and the disc or ring may have "a part cut away to "allow of the entrance of the loop."

[Printed, 6*d*. Drawing.]

A.D. 1860, September 27.—No. 2344.

BROOKES, Thomas, and **ADAMS**, Thomas.—"Improve- "ments in the manufacture of the joints of brooches and "other similar dress fastenings." That part of the joint which is connected to the back of the brooch is made of two tongues cut from the metal of the back or rim or frame and in one piece therewith; these tongues are bent into a tubular form. The other part of the joint (that which is connected to the pin) is made from a blank of a nearly rectangular shape, "about three times as long as wide," and with one half broader than the other. The narrower portion is rolled up into a tube and constitutes the middle of the joint; the broader portion is doubled up into a "trough-like shape." The pin, having its top bent at right angles, is put into the trough and held therein by closing the edges of the trough round it. The bent part of the pin "constitutes a stop which limits the "motion of the joint as well as springs the pin of the brooch "into its catch." The catch consists of a projecting piece left at the other end of the back or rim or frame and bent at right angles thereto.

If the tongues cannot be conveniently made in one piece with the back or rim, they are cut from a separate piece which is fixed by soldering; the flat portion of the piece (connecting the tongues) is bent to form "a raised bar." This bar serves as a stop "against which the pin bears to spring it into its "catch;" consequently it is unnecessary to bend the top of the pin before putting it into the trough.

[Printed, 8*d*. Drawing.]

A.D. 1860, October 4.—No. 2403.

REYNAUD, LOUIS PROSPER.—(*Provisional protection only.*) —"An improved buckle." The advantages claimed for this buckle are that it is "stronger" than the ordinary buckle, and that it keeps the strap through which the tongue passes "perfectly flat."

The sides of the frame are curved upwards "so as to admit "of the thickness of the strap passing beneath the front bar "and resting flat upon the strap which is secured to the "tongue or swivel bar." The point of the tongue also is curved upwards, the degree of curvature depending on "the "thickness of the strap for which it is intended."

[Printed, 4*d*. No Drawings.]

A.D. 1860, October 16.—No. 2515.

BENT, JOSEPH, and LUCKOCK, JOSEPH.—"Improvements "in ladies' clasps, and which said improvements are also "applicable for connecting or holding waistbands, belts, and "other articles of dress." This clasp may be connected and disconnected without being sewn or otherwise secured to the band or belt; it may be held down to the termination of the body or corset of the dress in front, allowing the ends of the band "to hang gracefully free, and yet capable of being "adjusted" to the size of the waist.

The clasp consists of an ornamental front having at the back "a vertical spring," which "works through a corresponding "vertical slot with a spring detent at the lower end." The ends of the band are passed between the spring and the slot, and when they are drawn sufficiently tight, the spring is "pulled forward and secured" by the detent. The lower end of the spring or of the ornamental front "may terminate with "a hook," whereby the clasp and band may be pulled down and hooked to the dress.

The same result may be obtained "by a vertical bar instead "of a spring" formed with the ornamental front or connected to it by rivets or a hinge; or "by the use of one, two, or more "vertical loops with a suitable bar or spring working over or "between one or more of them," the material of the band "being held between the inner and outward surface of the "loop or loops and the outside or inside of the spring or bar "as it may be arranged."

For broad belts or bands it is preferred to hold the material in position "between the front and a back vertical plate by "a pin attached to a spring" and passing through the back plate and the material; "the pin will be pulled back and the "belt liberated" by pressing the spring.

An improved belt clasp for boys' belts consists of a plate formed at one end with two or more shanks for riveting it to the material and at the opposite end with "a lever tongue" working between ears. The free end of the belt being passed between the ears, front plate, and tongue, is "tightened up "and regulated by the tongue passing through the desired "hole" of the belt.

Slight modifications are mentioned in the description of the figures in the sheet of drawings.

[Printed, 8*d*. Drawing.]

A.D. 1860, October 20.—No. 2567.

CLARK, William.—(*A communication from Jean Louis Antoine Marie Bouret and Charles Theophile Ferré.*)—"Improvements in the manufacture of articles of jewellery, "and in apparatus for the same." The inventors make "solid claw bezils or settings for mounting stones" in earrings, breast pins, brooches, &c., by cutting, stamping, and shaping pieces of metal in "an ordinary stamping press." The matrices are fixed by means of "two iron gripping parts," and the punches by means of a dovetail joint. "The com-" "binations of cutting, stamping, and shaping may be infinitely" "varied."

By the first operation the strip of metal is cut into the shape of a star; by the second the star is shaped into "the form of a" "hollow star," and by the third "the points of the star-" "shaped piece of metal are turned up or raised and form the" "bezil." The drawings exhibit a variety of patterns into which the bezils may be formed by means of suitably shaped tools.

Rings are made in a somewhat similar manner; a design is stamped on a matrix; a "preliminary cutting" of the piece of metal is effected by suitably shaped tools; the cut-out piece is submitted to the punch and matrix; "a second shaping is" "at times effected when there are parts to be hollowed out;" and the ring is "made circular by placing it on half cylinders" "of boxwood and striking it with a cylindrical wooden" "hammer." The "chevalier ring" is made in the same way. If a stone is to be placed in the bezil, "a third cutting is made" "in the centre of the ring of the form of the stone which is" "then centred." Rings with several claws "are made of two" "similar pieces" separately stamped and shaped or cut; the two parts are then soldered together.

[Printed, 10*d*. Drawings.]

A.D. 1860, October 27.—No. 2633.

CLARK, William.—(*A communication from Alphonse Cousin & Adèle Duval.*)—"Improvements in corsets & their" "fastenings, which are also applicable to other articles of" "dress." These corsets are improved (1) by introducing into the middle of the back an elastic gusset which facilitates the fitting; (2) by fixing to the busk "a petticoat hook" either by means of a rivet or "by a method of attachment which permits" "of its being placed at various heights;" (3) by a "new" "system of fastening."

Tabs or straps are fixed to the stays on each side in front; on these slide clasps which are connected to the busk "by" "hooks taking into holes made in the busk or hooking on to

" buttons fixed to the same." The clasp "is formed of a " plate of any substance having a hollow or concavity formed " across it and of a sliding piece fitted to slide on it or pivoted " in the hollow part of the plate." The tabs slide through and double over the slides (square metal hoops); they are " pressed upon by the tail end of the clasp in such manner " that the greater the strain the tighter it holds."

Sometimes the corset is made without a busk; in this case the part usually occupied by the busk is provided with "double " buttons" for the reception of the eyes or hooks of the clasps.

The inventors show in the annexed sheet of drawings " different forms of clasp fastenings made after this system " and adapted for different applications," namely, "garters, " braces, waistcoats, drawers, petticoats, waist and other " belts."

[Printed, 6*d*. Drawing.]

A.D. 1860, October 29.—No. 2637.

BROUGH, Nehemiah, and KILBY, George Thomas.—"New " or improved fastenings for articles of dress, and for fastening belts and bands generally." These fastenings made by preference from sheet metal are applicable to braces, garters, belts, and waistbands.

1. A fastening for braces and belts:—One part is a plate from which two "semi-elliptical pieces" are cut, thereby forming a frame with a bar across the opening. The other part is a frame from which are cut an elliptical opening and a loop; it is "bent or folded at about its middle round the bar" and turns thereon. The lower end of the brace (the part carrying the button holes) is attached to the loop; the upper portion passes under the one edge of the frame, over the bar and under the other edge, between this edge and the fold or tongue. In a belt one end is fastened to the loop, and the free end passes through as in the brace.

2. A fastening for garters, belts, and waistbands:—Each plate is cut with a loop, and one with two ears which are bent over a portion of the plate. The other plate "has an expanded " end," which is held between the ears. In garter fastenings the ears are usually at the middle, in belt and waistband fastenings at the end of the plate.

3. A fastening for braces, which with slight modification may be used for mill-bands, traces, &c. :—A metallic frame slides on the main part of the brace ; a flap carrying a pin or tongue is hinged to the frame. The brace end is fixed to the flap. In the front of the frame is a hole into which the pin may enter, and that portion of the main part over which the frame slides is perforated with holes for the entrance of the pin.

[Printed, 10*d*. Drawings.]

A.D. 1860, November 21.—No. 2857.

MYRING, CHARLES.—"Improvements in the manufacture "of covered harness furniture, buckles, slides, and other "similar articles, and in the machinery or apparatus to be "employed in such manufacture." The patentee describes his invention by the processes which he adopts in covering a buckle. He wets the covering leather, coats it with paste, and draws it over the metal form for the buckle. He then places the form with the leather on it in dies, and by means of pressure closes the leather round the metal. He then partially dries the covered buckle, again places it in the dies and submits it to pressure "to level the covering." He then thoroughly dries it, dyes it if required, and again presses it "in the dies which then polish it." He now proceeds to the stitching by means of a sewing machine, preferring those known as "Simpson's patent ;" as however this machine requires alteration to render it fit for sewing the leather close round the metal form and to avoid breakage of needles against the metal, he applies "a stop under the foot of the sewing "machine, which stop guides the buckle up to the needle." The buckle thus covered and stitched is placed in "a press "furnished with cutting dies, by which the paring-off process "is performed." The tongue is bent and curled round the bar in a fly press, in which the tongue fits into a groove cut in "the narrow beaked jaws of a pair of clamps."

The patentee describes and claims the pressing and polishing between dies, the alterations in the sewing machine, the polishing apparatus, the paring tools, and the press for curling the tongue round the bar.

[Printed, 1*s*. 4*d*. Drawings.]

A.D. 1860, November 26.—No. 2907.

MANTON, JOHN SHAKESPEARE and ISLIP, THOMAS.—"Com-" positions useful for many purposes in connection with the " arts and mnnufactures, and in machinery or apparatus to be " employed therewith, which machinery or apparatus is also " applicable to several other purposes of utility." The patentees apply their invention to the manufacture of buttons as well as to other articles. The composition consists of shellac incorporated whilst in a heated or plastic state with "the lac " minerals, earths, and arenaceous matters, such as porcelain " or baked earths, silica or any siliceous compounds, glass, " pebbles, marbles, slate, basalt, slags, carbonates of lime, " whether animal or mineral, shells of any kind, such as pearl " or oyster." The proportion of each ingredient employed varies "with the nature of the material to be mixed with the " lac;" if pearl dust is used, the proportions are 1 lb. of lac to 1½ lbs. of pearl dust; colouring agents are added as required. The dust (dyed if necessary) is dried and then mixed with the lac under heat, until the mass "assumes a pasty con-" sistency." The mass is then submitted to moderate pressure in dies, and when cool "assumes a strong hardness."

The apparatus is called "an improved rivetting machine," useful for securing together discs of brittle material, such as pearl, glass, or the foregoing compound; the advantage claimed for it is that the action thereof "not only avoids " splitting the material but at the same time burnishes the " rivet." The improvement consists "in applying a drill " action to the hammer, striker, or punch of a rivetting ma-" chine or punching press, so that the hammer or punch in " descending or striking is caused to revolve rapidly whilst " closing down the rivet." The apparatus and its action are described in the Specification.

[Printed, 8*d*. Drawing.]

A.D. 1860, November 30.—No. 2937.

GILBERT, DAVID.—(*Provisional protection not allowed.*)—" Inlaying, marking, & engraving ivory, vegetable ivory, " wood, or horn buttons, or such as are made of similar " materials, by a new process." The marking or engraving is effected "by tools in an ordinary fly press;" there is " nothing new in the nature of the tools."

The buttons are prepared for marking or engraving by flattening their surfaces, "to a dead level" if a flat shape is required. For inlaying or colouring such colouring matter is used as can be rubbed or painted in.

[Printed, 4*d*. No Drawings.]

A.D. 1860, December, 1.—No. 2948.

FARMER, CHARLES and FARMER, WILLIAM.—"New or "improved machinery for the manufacture of the hooks used "principally as dress fastenings." The motion of the several parts of this machinery is communicated from "a principal "shaft by means of cams and levers;" and the chief novelty consists of a "pair of side dies, in which the hook is held "during the final bending of the beak, and by which the beak "is supported during planishing."

A feeder of the ordinary construction supplies the wire into the machine. The wire passes from the feeder through a support over two conical pegs and into guides, the length fed into the machine being regulated by a stop. A cutter descending cuts off the required length which is now supported in the guides. A flat tool or blade descending presses upon the middle of the wire and doubles it by carrying it between the pegs, which are so far apart that when the wire is carried down by the tool it is bent nearly into a V-shape, the ends standing above the pegs. A forked spring opens out the ends into a nearly horizontal position and holds them on the pegs until the descent of a fork-shaped tool. The pegs approach nearer to each other, and the tool turns the ends downwards over them. Two side dies "approach on either side in a horizontal plane "and bend the vertical ends of the wire under the pegs." The flat tool now rises from between the branches of the doubled wire; the pegs approach each other, and the side dies advancing press the branches close together. The part of the hook immediately below the needle holes being securely held by the dies, a bolt "advances horizontally underneath that "part of the dies by which the hook is held and bends the "lower unsupported part of the hook into a horizontal posi-"tion. A roller rising bends up the horizontal part parallel to the part held in the dies, and passing over it "with great "*pressure*" planishes it at the same time. The dies now open, and a tool "descends obliquely and pushes the finished "hook from the pegs."

The machine together with modifications of the side dies is fully described in the Specification.

[Printed, 10*d*. Drawings.]

A.D. 1860, December 5.—No. 2987.

LINGHAM, George Calley and NICKLIN, Joseph.—"Improvements in belt fastenings, and which said improvements "are also applicable as a connector for brace fronts, garters, "and other articles of dress." This fastening consists of two parts, each having a loop at the outer end for connecting it to an end of the belt. On the part forming the under plate is "a moveable bar" and under the bar "a raised bed" is formed "somewhat corresponding with the bar." In the part forming the face plate is a "horizontal slot or opening." When the bar and the bed are passed through the slot and the bar is "turned a quarter turn in either direction," the whole "forms a simple and an efficient connector admitting of much "diversification of design." The raised bed, "being the "counterpart of the slot," prevents "any lateral shaking "action." For ladies' belt clasps a hook moving on a pin may be added to the lower end of the face plate; when the bar is vertical, its lower extremity "will be brought in contact with "the outside top end of the hook," so that when the parts of the clasp are united, the hook will be in position "to hold "down the band at the termination of the stomacher of the "dress." The "diversification" above mentioned is exhibited in several figures in the annexed sheet of drawings and is explained in the Specification.

When the invention is applied to a brace front, the slot is cut in the lower part of the buckle frame, and the bar works on a centre pin fixed in the upper portion of the loop which carries the brace ends.

[Printed, 10*d*. Drawing.]

A.D. 1860, December 17.—No. 3090.

TAYLOR, John George.—(*Provisional protection only.*)—"Improvements in dress and other fastenings, and in the "application and manufacture thereof." The first part of this invention relates to the making and ornamenting of hairpins.

The second to making "covered pointed pins with one or "more projections forced out of the branch or sheath." This system of projections the inventor uses "in the manufacture "of the flexible part of springs to facilitate their being "opened." Such springs he informs us "are useful for "fastenings" for divers articles, among which he mentions garters.

[Printed, 4*d*. No Drawings.]

1861.

A.D. 1861, January 8.—No. 48.

CHASSANG, **Pierre Emile**. — (*A communication from Simon Ghidiglia.*)—"An improved buckle." The buckle plate is made with a loop at the upper end, a projection on each side, and a recess in the lower portion at the back. A moveable frame is hinged on to the projections, and its lower bar fits into the recess. One end of a strap is attached to the loop and prevented from sliding thereon by "small projec-"tions" on the loop bar; the other end "is passed from the "back between the moveable bar and the buckle plate and "returned upon itself." The strain on the strap "draws the "bar into the recess, and so compresses the strap and prevents "it from slipping."

[Printed, 6*d*. Drawing.]

A.D. 1861, January 9.—No. 59.

GEDGE, **William Edward**.—(*A communication from Jean Tissinier.*)—"An improved buckle" for trousers and waistcoats. The buckle consists of "a square of any metal with "one or two square or slightly circular openings;" in one of the openings are "two small teeth intended to hold one of the "straps in a fixed position."

The loose end of one of the straps at the back is "passed "through the square or other shaped opening, lapped over "the bar on which are the teeth," and then sewn into a loop. The loose end of the other strap is "passed through the open-"ing and drawn over the opposite bar" until the garment is sufficiently tightened; this end, "being then lapped down on "the other part" of the same strap, is fastened thereto, "by "a stud passing through one of several button holes in the "part lapped over and in that on which it is lapped;" it may however be secured "by a single button or otherwise."

[Printed, *4d.* No Drawings.]

A.D. 1861, January 16.—No. 125.

READING, John.—"Improvements in swivels or fastenings "for connecting watches to watch chains, for fastening articles "of jewellery, and for other like purposes." These swivels may be made in either of the following ways:—

1. Two separate parts, bow-shaped at the lower end, turn on a centre "in a manner similar to a pair of scissors." The longer part is made with a shank, carrying a bow on its top, a hollow sliding collar (with a spring inside) on its stem, and a bevelled shoulder at its bottom. The shorter part is bevelled at top, so that when it is turned on the longer part, the bevel engages with the shoulder, and the swivel is closed, and is kept closed by sliding the collar down until the spring enters a "depression or groove in the contracted end" of the shorter part and the shank. The sliding collar may be made self-acting by means of a coiled spring; or it may be fixed by screwing.

2. The body of the swivel is hook-shaped; on the shank or unbent part, a coiled spring forces a collar or tube down towards the end of the hook and thereby "closes the swivel."

A third method of manufacture is described (but not claimed) in the Provisional Specification, being only a modification of that for which the patentee obtained Letters Patent dated March 1st, 1856, No. 528.

[Printed, *6d.* Drawing.]

A.D. 1861, January 30.—No. 246.

SMITH, Ephraim.—"An improvement in the manufacture of "swivel rings especially applicable to swivels and watch "keys." The patentee connects the ring to the swivel by a tang or tangs formed in a piece with the ring or united to it. He so shapes the tang or tangs that "on being placed inside "the body" of the swivel, "the body may be pressed or "closed thereon in such manner as to allow of the tang

" or tangs swivelling or turning in the body" but incapable of being withdrawn.

Sometimes he makes the top of the body of the swivel "to " form a tang," and the ring "with a bell or tube, which is " pressed in upon the tang and within which the tang is free " to revolve."

[Printed, 6*d*. Drawing.]

A.D. 1861, February 19.—No. 405.

BRIERLEY, John Henry.—"A clasp or fastener for belts " bands, or straps, or for improvements contained therein." This clasp is composed of two parts, a plate of metal of any design with a hook attached to its back, and a plate of metal cut with a slot for the reception of the hook. The latter plate is affixed to one end of the belt by eyelets. The hook of the other plate is passed through one of several holes punched in the other end of the belt and then through the slot.

The hook thus answers the following purposes; it secures the clasp to the belt without stitching; it affords means of readily adjusting the length of the belt; and it secures the belt to the wearer.

[Printed, 6*d*. Drawing.]

A.D. 1861, February 26.—No. 497.

ORENSTEIN, Moritz.—(*Provisional protection only.*)— " Apparatus for securing watches and preventing the surreptitious abstraction of such articles from the pockets or other " parts of the dress of the wearer." The watch is enclosed within "a circular metal rim, band, or case" provided with a metal guard chain whereby the watch may be attached to any portion of the dress. The rim is divided so that it may readily be fitted to the watch and removed from it, and the parts are united by a screw or other fastening; it is also elastic and " the fastenings are so arranged that the circumference of the " rim or band may be lengthened or shortened according to " the variation in the size of the watch."

A skeleton case may be used for the same purpose; it must of course "be made to fit the watch."

[Printed, 4*d*. No Drawings.]

A.D. 1861, March 4.—No. 551.

NEWTON, Alfred Vincent.—(*A communication from Alvin Childs Mason, Henry Hubbard Mason, and David McAllister Smith.*)—"An improved construction of hook for "hook-and-eye fastenings." This hook is made "with a snap "or spring guard," which will prevent the casual detachment of the hook from the eye.

The beak and the opposite ends are constructed in the ordinary way of a single piece of wire. One of the legs of the stem is long enough "to admit of being bent and extended "forward sufficiently far to pass behind" the beak and form a snap or spring guard, the leg "having sufficient elasticity to "form a spring which keeps the end of the leg" against the beak. To facilitate the release of the eye, the extremity of the snap "is bent down at right angles," and a recess in the stem of the hook receives the end and prevents it "from being "bent laterally and put out of order."

[Printed, 6*d*. Drawing.]

A.D. 1861, March 5.—No. 557.

HASELER, William Hair.—"Improvements in joints or "hinges for jewellery and other articles having or admitting "of metal joints or hinges; also for improvements in the "manner or means of suspending such articles by or with "such joints or hinges." The patentee applies his invention to lockets, locket watch keys, watch cases, breast pins having "a hollow spherical head" which opens on a hinge, watch hooks, split rings, swivels, pieces of chain, joints of brooch pins, and fastenings for the pointed ends of brooch pins. The invention is "susceptible of considerable diversity in form," and in the annexed sheet of drawings are shown "various views of "different forms of joints or hinges as applied to various kinds "of articles."

The joint or hinge is composed of two "plano convex" rings and a tubular or hollow rivet. The rings are soldered or otherwise fastened on to the separate parts of lockets, watch cases, &c. &c., so that "by placing two of these rings with "their flat faces together a perfect ring having a circular "section will be produced." The rivet "is passed through "the two halves of the joint, and is upset at both ends so as "to hold the two parts together." These parts are capable "of moving on each other," but are prevented from coming apart "by the upset tubular rivet." A ring which is passed through the rivet forms the means of suspending the article. Sometimes some of the articles are made with "a kind of "double joint;" others with "a form of double joint," which the patentee calls "a crank joint."

The fastening for the pointed end of a brooch pin consists of two rings held together by a tubular rivet. One ring is fixed to the back of the brooch; the other is moveable and carries a stud whereby it can be moved so as to bring an opening in it "round to a corresponding opening in the fixed ring."

[Printed, 10*d*. Drawing.]

A.D. 1861, March 5.—No. 565.

NEWTON, William Edward.—(*A communication from W. Kuplenschmidt.*)—"An improved fastening for buttons, "studs, breast pins, brooches, and other articles." This fastening is "a needle-pointed spiral of peculiar form" and is attached to the under side of a button, &c. instead of the ordinary shank, stem, or pin. The inner end of the spiral "is bent up at right angles to the helical part" and fixed to the button, &c. The helical part is so arranged "that its "inner extremity (where it joins the vertical portion) is the "lowest, while at the same time the point is bent down." The button, &c. is attached by passing the needle point through the material and turning the button, &c. round; to take it off "an outward strain" is required whilst turning it backwards.

[Printed, 6*d*. Drawing.]

A.D. 1861, March 8.—No. 586.

JOHNSON, John Henry.—(*A communication from Simon Hayen, senior.*)—"Improvements in cravats or coverings for "the throat and chest, and in the fastenings for the same, "which fastenings are applicable to various other parts of "dress." The cravat consists of a neck piece or band whereto are sewn "the two ends of the scarf in such a manner as to "fit partially over the shoulders and consequently be well "retained in their places by the waistcoat."

The fastening "presents the outward appearance of two " buttons placed side by side," the one being made with a hook, spring, or clasp for uniting it to the other, which is provided with a corresponding appliance. The buttons are attached to the ends by a stud formed at the back of each, and a button hole in each end, or by means of "sharp hooked " claws" which hook on to the ends.

Modifications of the fastening:—The buttons may be joined together by a hinge, a chain, or other appliance. A single button may be used "divided down the middle," each half " being provided with one or more claws;" or it may be without any division, in which case "one of the claws or pairs " of claws is fitted to a sliding bar acted upon by a piece of " elastic or other convenient form of spring."

[Printed, 8*d*. Drawing.]

A.D. 1861, March 12.—No. 605.

TOMLINSON, JAMES.—"An improved buckle plate or apparatus used for attaching and detaching horses when in " harness, or for other purposes to which the same may be " applicable." This apparatus consists of a loop plate, a bolt plate, and a covering plate, all of metal. The loops of the buckles project round the edge of the loop plate which is "of " a circular or other convenient" form. The tongues of the buckles are hinged on the outer parts of the loops; their ends " pointing towards the centre of the plate are sometimes flattened out and have a hole through them in which the point " of a bolt enters." The bolt plate turns on a pin in the centre of the loop plate; it has on its periphery as many bolts as there are loops and a projecting piece which terminates in a stud. The covering plate "has portions cut out of its edge " to receive the pierced ends of the tongues;" these rest on a spring secured to the loop plate and "interposing between the " bolt plate and the covering plate." In the covering plate there is a slot through which the shank of the stud passes. The stud end "forms a spring bolt catching upon a raised lip" on the loop plate. A strap is attached to the stud; this being pulled "will draw the bolt plate partly round," thereby releasing the straps held by the tongues.

[Printed, 6*d*. Drawing.]

A.D. 1861, March 20.—No. 702.

MCDOUAL, Joseph Eden.—(*Provisional protection only.*)—"An improved fastening or coupling," applicable to parts of dress, belts, and articles of jewellery. This invention consists in adapting to a screw "a loose head, in which one end of the "shaft of the screw is allowed to rotate as the screw is pushed "forward."

In applying this invention to articles of dress, one part of the head is made flat, so that it may rest against the dress and "be thereby prevented from rotating or allowing the screw "itself to rotate." By this means "the screw will be securely "held in the dress until the head is released and the screw "allowed to rotate on its axis." Or the screw shaft may carry a transverse bar, "which as it passes through the screw "shaft will prevent the latter from rotating whilst the bar is "kept against the dress."

In applying it to waist belts and the like, each end of the belt carries a block or slide cut with a female screw; the male screw of the fastening works therein, and "the moveable "squared head of the screw will then rest against a flat part "of the belt and be thereby prevented from rotating."

"A right and left handed screw on the same shaft" will serve to fasten pins, brooches, &c. to dresses.

[Printed, 4*d*. No Drawings.]

A.D. 1861, March 26.—No. 758.

BROWN, William Fulford, and JEFFERY, Walter.—(*Provisional protection not allowed.*)—"A more convenient and "effectual method of attaching brooches and such like articles, "and for improved fastenings to be used therewith, and for "other purposes." The pin is detached, and the brooch is made "with two loops, staples, or studs." When the pin is inserted in the dress, one loop is passed over the pin point, and the other is secured to the pin head, "which must be "formed with some such contrivance as the following :"—

1. "A sliding case" (the shape of which is shown in some of the figures in the annexed sheet of drawings) is attached to the head and kept shut "by a spring within it."

2. The head consists of two concentric tubes, each having an opening for the admission of the loop; the stem is fixed to one of the tubes, the other "being made to revolve."

3. The exterior tube "is made with a projecting chamber," into which the loop passes and is secured by the revolution of the interior tube. Or the interior "has a part cut away sufficient to allow of the entrance of the loop," which "falls "into the enclosed part" and is secured therein as before.

[Printed, 6*d*. Drawing.]

A.D. 1861, March 26.—No. 760.

EMES, Hannah.—(*Provisional protection only.*)—"Im- "provements in dress fastenings which are also applicable to "other fastening purposes." The fastening consists of a button and a hook, the button shank serving as an eye.

The shanks are passed through holes and secured by a cord which runs through their eyes. Hooks sewn to the opposite part of the dress are hooked on to the eyes; they are made "somewhat of a circular form," and the portion sewn to the dress is "somewhat of a T-form."

Some buttons are made "with hooks to the shanks in ad- "dition to the eye;" they are fastened to one edge of the dress, and the hooks are "inserted into the opposite edge of "the garment into suitable eyes formed therein" or sewn to it.

[Printed, 4*d*. No Drawings.]

A.D. 1861, April 6.—No. 853.

GHISLIN, Thomas Goulston.—(*Letters Patent void for want of Final Specification.*)—"Preparing, applying, and "adapting certain vegetable productions called eiklonia "buccinalis, proteaceæ, juncus serratus, juncus trista, and "armyllideæ to further new purposes of manufacture, and "certain modes to effect the same." In a long list of articles, which may be made from "the first article, a marine plant or "fungi, known to botanists as the eiklonia buccinalis," and its several varieties "both solid and hollow," the inventor mentions "imitation of cameos, bogwood, ebony, ivory, and "coral, and such other materials as are used in the manu- "facture of buttons, bracelets, breast pins, brooches, eardrops,

" studs, beads, and armlets." No mode of preparation or manufacture is described.

[Printed, 4*d*. No Drawings.]

A.D. 1861, April 9.—No. 869.

GILL, Charles.—(*Provisional protection only.*)—" Im-" provements in the construction of swivels, hooks, or other " similar connecting instruments for chains, jewellery, and " other articles." The first improvement relates to "a locking " instrument or bolt for closing the passage into the eye or " loop of a swivel or hook; the second to attaching the ring to the stem of a swivel, watch-key, &c.

"The passage to the interior of the loop" is closed up by means of "a jointed piece" which is pin-jointed at one end to the stem, the other end "being formed with an arm or " projection to act as a bolt, which when closed passes through " a hole or opening in the end or point of the hook and across " the loop, the end of such arm entering into a recess in the " opposite side, where it is retained by a spring or split in " the arm and by recesses which act as catches to hold the " closing piece securely in position until withdrawn by force " to open the same."

Or the closing piece and the arm are arranged "to move " inwards," the arm carrying a spiral spring "to act on the " closing piece."

2. The ring is made with a cap or socket. The top of the stem has a collar or head fixed thereon and below this a loose collar of the same diameter as the fixed collar and of the inner diameter of the cap. The cap is placed on the stem and the loose collar is secured to it by pins, soldering, or other means.

[Printed, 4*d*. No Drawings.]

A.D. 1861, April 9.—No. 871.

WESTBURY, William, and COOKE, Edward.—" A new or " improved fastening, which said fastening is applicable to " the fastening of windows and also to the fastening of belts, " garters, braces, and other articles of dress." The belt or garter clasp consists of two parts, each having a loop at the outer end for fastening to an end of the belt or garter. One part is contracted at its inner end where it carries two studs. The other part is pierced with two corresponding slots and is provided with a slide, whose tongues or ears are bent under the part and correspond in shape with the contracted portion of the other part. The slots are passed over the studs, and the slide (which has two openings made in its front edge) is pushed forward until its openings "engage under the studs."

The slide may turn on a pin and engage with the studs "by rotatory motion."

The part carrying the studs may be smaller than the other part; the slide may correspond in shape to the back portion of its part, so that when the two parts are united, the larger part alone "completes the proper configuration of the belt "clasp."

One part may carry "a raised loop;" the other part may have "a rectangular opening" through it; and the slide may be furnished in front with a tongue, which "engages with the "loop" after the latter is passed through the opening.

The brace clasp or buckle is a straight or hook-shaped piece of metal with a stud on its top. The web of the brace is pierced with a series of eyelet holes and carries a slide having a slot in its lower edge. The stud is passed through one of the holes, and the slide is pushed down until the slot engages with the shank of the stud.

[Printed, 10*d*. Drawings.]

A.D. 1861, April 10.—No. 878.

WESTON, THOMAS ALDRIDGE. — (*Provisional protection only.*)—"New or improved fastenings for fastening bands and "belts and articles of dress, and for such other purposes as "the same are or may be applicable to." This fastening consists of two pieces of sheet metal, one "being doubled or folded "upon itself, so that its two halves lie flat or nearly flat upon "one another," the other being "a flat plate perforated." The doubled piece is cut in the following manner :—One of the flaps "has a piece cut out of it, so as to make a clear "opening therein;" the other "has a semi-circular or horse-"shoe-shaped slit cut in it," exactly opposite the opening in the other flap. The metal within the slit is raised up and forms a tongue, "which projects into or protrudes through the

" circular opening " in the other flap. The raised end of the tongue "is turned towards the fold."

To secure the two parts together, the single piece is inserted between the flaps "at the point most distant from the fold," and "passing over the inclined tongue raises its end from the " hole in the opposite flap." The hole in the single piece coming over the end of the tongue, the tongue "is sprung " through the said hole, and into or through the hole in the " opposite flap by its own elasticity, or by that of the doubled " flap." To separate the parts, "the single flap is pushed " still further between the sides of the double flap, and moved " laterally."

The foregoing arrangements may be modified "without departing from the nature " of the invention.

[Printed, 4*d*. No Drawings.]

A.D. 1861, April 12.—No. 901.

HASELER, George Carter.—(*Provisional protection only.*) —"Improvements in the joints on hinges of lockets." This invention consists in "the application of two parallel joints or " hinges acting side by side and in conjunction." When the joints are secured in position, a ring or loop for the suspension of the locket may be attached to "the centre parts of the " joints."

[Printed, 6*d*. Drawing.]

A.D. 1861, April 18.—No. 947.

NORTON, Charles.—(*Provisional protection only.*)—"Im" provements in the manufacture of ornamental eyelets." A disc of pearl or metal of ornamental design is pierced through the centre for the passage of a metal tube having at one end a flange or rim to prevent it from passing through the hole in the disc. The tube is passed through a hole in the material to which the eyelet is to be fixed and is expanded on the back of the material, the pearl or metal forming the ornament, and the tube the lace-hole.

[Printed, 4*d*. No Drawings.]

A.D. 1861, April 18.—No. 951.

WILKINSON, Thomas Borrett.—(*Provisional protection only.*)—"An improved means for securing a watch in the "pocket of the wearer." This watch protector consists of a button having "a suitable loop, by preference of catgut," a split ring, and metal eyelet. The eyelet is secured in a hole made in the lining at the back of the pocket; the catgut is passed through the eyelet leaving the button outside the lining; the ring is put on to the loop and hangs within the pocket. The chain of the watch is passed through the ring.

[Printed, 4*d*. No Drawings.]

A.D. 1861, May 3.—No. 1110.

RHIND, Alexander Forbes.—(*Provisional protection only.*)—"Improvements in the fastenings of brooches, pins, and "other articles of jewellery, which fastenings are also ap-"plicable to other articles." This fastening, "which is "particularly applicable to the neck scarf as at present "worn," consists of "a kind of cramp or **U** piece which "embraces the lapping parts of the scarf." A binding screw, the head of which forms part of the ornament, is "placed in "one of the limbs" of the cramp and by means thereof the parts of the scarf are gripped and held together. "The front "limb" of the cramp and the head of the screw are ornamented by setting stones therein or otherwise, and a pin stem may be added "to imitate the stem of an ordinary pin."

The same kind of fastening may be applied to brooches, watchguards, &c., &c.

[Printed, 4*d*. No Drawings.]

A.D. 1861, May 7.—N° 1154.

JOHNSON, John Henry.—(*A communication from George Meacham.*)—"Improvements in buttons for garments or "other purposes." The principle of this invention consists in making the button proper and the shank in two separate and distinct parts, so that when the shank is attached to a garment and the button and shank are united, "the button is "at liberty to revolve on and assume various angular positions "relatively to the shank." The advantages claimed are that the button "is not so liable to become loosened from the "garment," the garment "is more easily buttoned," and "there is less wear on the buttonhole." The invention may be carried out in various ways :—

1. The body of the button is pierced with a hole a little larger than the neck of the shank, but smaller than the head thereof, so that when the shank is passed through the hole and fastened to the garment, "the button cannot be removed, but may turn in various directions on the shank."

2. The back of the button is formed with raised edges and is perforated as before described. When the back and shank are fastened to the garment, a face of a plain or ornamental character is "screwed or otherwise fastened within or upon the "rim formed by the said raised edges," space being left inside for the button "to rotate and rock on the shank."

3. The face and back are permanently fastened together; space is left between them for the head of the shank; two slots are cut in the back, one of such form that the head of the shank may pass through the larger portion thereof into the smaller portion (which is at the centre of the back), the other for the insertion "of any suitable instrument." A disc, "which is free to rotate relatively to the button and is pierced "with an opening" corresponding to the shank-slot, is placed between the face and back. When the shank is in position through the back and the disc, the instrument is inserted, turns the disc, and thereby locks the shank, allowing the button to rotate, &c. as before.

The figures in the annexed sheet of drawings show several styles of buttons variously put together, but all made on the principle of rotating or rocking on the shank.

[Printed, 8*d*. Drawing.]

A.D. 1861, May 24.—No. 1319.

PATERSON, JOHN.—"An improvement in clasps or buckles," particularly suitable "for belts, neckties, garters, and braces."

This clasp or buckle is made "by fixing at the back of a "solid or openwork disc, shield, or plate two loops, each "being free to move upon a pin" in lugs on the disc. Bars "prevent the loops falling in the wrong direction."

To apply the clasp to a necktie, one end of the tie is passed through one loop and turned back before placing the tie round the neck; the other end is afterwards passed through the other loop, turned back, and drawn sufficiently tight. The loops "nip the tie between themselves and the back of the clasp, "and the tie is held securely."

[Printed, 6*d*. Drawing.]

A.D. 1861, May 27.—No. 1325.

GREEN, EDWIN, and CADBURY, JOEL.—"Improvements in "buttons for general use." These improvements relate to linen buttons and trouser buttons. Linen buttons are made in either of the following ways :—

1. The front and back are covered with woven fabric, "one "or both sides being finished with a concentric ring or eyeleted "hole formed through the front shell and covering, or both "front and back if preferred, by the metal of the front shell or "shells being raised and thrown over for that purpose." A bar (variously shaped) is placed between the front and back and forms the shank. The thread rides on the bar "being passed "in and out and through the concentric eyeleted hole."

2. The button is made with a metallic back "so raised and "pierced as to form two or more small ringed or eyeleted "holes, the junction of which forms a bar for the thread to "ride on." This portion of the invention "may be greatly "diversified;" the metal may form the front or the back, the opposite shell being ring-holed or pierced for the passage of the needle. Or the "visible metal portion forming the eyelet "holes and bar" may be reduced "to the mere extent of small "double or triple eyelet holes," the intermediate space dividing them "forming the bar or bars for the thread to ride "on," and "the front or one side" being formed as before described with a concentric eyeleted hole "covered or other-"wise by the fabric for the needle to be passed through."

"A modification of this description of button" may be made for trousers, vests, coats, and other purposes, "without being "covered with woven fabric."

"A general trouser button" is made "in one or two parts "from thin metal" by raising, casting, or otherwise, and "with a transverse bar crossing the centre opening." This bar is formed with projecting ridges or with a groove or grooves round it for the thread, thus preventing any "loose lateral

" action," or with slight projections on the front "so as to " confine the thread to the centre."

The figures in the annexed sheet of drawings show the various ways in which the bars and needle holes may be constructed and the parts of the button be put together.

[Printed, 8*d*. Drawing.]

A.D. 1861, May 30.—No. 1355.

HEINEMANN, Louis.—(*A communication from Messrs. Stautz and Company.*)—" An improved fastening for purses, " reticules, bags, belts, bands, pocket-books, cigar, writing, " and instrument cases, and other similar purposes." This fastening is described as affixed to a cigar case. On each side of the frame is a piece of metal (termed a seat) which projects from the top surface and over the inner edge. The seats are alike in shape and size "in transverse section," although they may be of different lengths; when the frame is closed, they " come in a line with each other, each projecting sufficiently " for that purpose over the opposite lip of the frame." A sliding piece, having a "top with two sides but no bottom or " ends" and called a saddle, "is fitted astride" on one seat; it carries a knob for convenience of moving it to and fro, and is kept on its seat and steadied in its travel by means of a pin fixed in one side and projecting inwards so as to enter and slide along a groove cut in the corresponding side of the seat. The seats may be of any shape, the shape of the saddle of course corresponding thereto. A lock may be let into one of the seats, the keyhole coming "flush with the top surface."

[Printed, 8*d*. Drawing.]

A.D. 1861, June 24.—No. 1613.

DANCE, Enoch.—"A new or improved crinoline fastener." This fastener "consists essentially of a flat metallic tube, in " the interior of which the ends of the crinoline hoop are held " by means of teeth or serrations;" it is made by preference of sheet steel, but iron, brass, or other hard sheet metal or alloy may be employed.

A rectangular blank is cut out, and in it are made two piercings which are formed into two tongues with serrated edges. The short sides are bent so that the whole forms " a "flat open-jointed tube" with the tongues facing each other, one near each side in the interior of the said tube.

The ends of the material to form a hoop are flattened and "inserted into the open ends of the fastener respectively until "they raise and pass under the bent and serrated ends of the "tongues." The elasticity of the raised tongues causes the tongues "to engage in the ends of the crinoline, and thereby "to securely fasten the two ends together." The ends of the crinoline can be released by raising the tongues "by inserting "a knife or other suitable instrument in the side slots of the "piercings."

[Printed, 8*d*. Drawing.]

A.D. 1861, June 26.—No. 1632.

LINGARD, Edward Abbotts. — (*Provisional protection only.*)—"Improvements in fastenings for jewellery or other "articles." Bars of metal (one or more) are fixed to a bridge or bow of metal or other material so as to leave an aperture for the admission of the article or articles to which it is desired to attach the fastener. Inside or outside of the bars bolts or slides (one or more) work so as to close the aperture; they may be fitted (or not) with "propelling or retaining springs," and for greater security they may have "a securing or locking "action applied to them."

[Printed, 4*d*. No Drawings.]

A.D. 1861, June 26.—No. 1639.

LION, Auguste.—"Improvements in the fastening of bracelets." The fastener is of the ordinary kind, namely, a spring and socket, and the improvement consists in the addition of a safety screw to either part.

The screw, when applied to the spring part, works through a nut which is soldered to the outer end of the spring; at the bottom of the stem is a stop to prevent escape from the nut. When the spring is thrust home into the socket, the parts are held secure from becoming accidentally unfastened by turning the head of the screw until it rests on the top of the nut, when the bottom of the stem will press on the bottom plate of the spring, or on that of the socket if the plate of the spring is slotted.

When the nut carrying the screw is affixed to the socket part, the spring is slotted for the passage of a portion of the stem of the screw.

[Printed, 8*d*. Drawing.]

A.D. 1861, July 16.—No. 1792.

ABEL, Charles Denton.—(*A communication from Henri Catherine de Ruolz.*)—"Certain new alloys of silver with " other metals, and the processes employed in their manu- " facture." Six compositions are described, of which the second and sixth are "intended for silver jewellery." The ingredients of the second are silver 40 per cent., purified nickel 20 to 30 per cent., and the purest copper 30 to 40 per cent.; of the sixth, silver 400 parts, the purest copper 446 parts, zinc 108 parts, and purified nickel 46 parts.

Two processes are described for purifying the nickel; in one " a galvanic current," in the other "ferrocyanide of potassium" is used; but the nickel may be "obtained from any other " source."

To prepare "the preliminary alloy," the nickel is fused with the copper, "charcoal or other suitable carbonaceous material" being added together with ferrocyanide of potassium, "which " being employed as a flux imparts to the alloys peculiar pro- " perties." Manganese is sometimes added to the ingredients. When zinc is used, it is preferable to fuse the zinc and copper together and then to fuse the alloy thus obtained with the nickel.

"The definite alloys" are made by fusing the preliminary alloys with the silver, "employing either one or more of the " following fluxes or reducing agents, namely, ferrocyanide of " potassium, ferricyanide of potassium, charcoal, borax, to- " gether with phosphorus." To restore to the definite alloy " its ductility and malleability, which it loses by the intro- " duction of the phosphorus," it is necessary "to eliminate " the same almost entirely from the alloy, after having by " its acid obtained homogeneous ingots."

[Printed, 6*d*. No Drawings.]

A.D. 1861, July 26.—No. 1875.

THUREL, Félicité Noëmi.—"Improvements in the method " of fastening shoes, stays, gloves, and other wearing apparel."

This invention may be said to consist in the method of manufacturing and fixing eyelets.

The eyelet is composed of two distinct parts, namely a tube forming the eyelet hole and a shank terminating in a cross bar of a T form. The shank is let in between the fabric and the lining and secured by a seam or rivet, so that each tube "may be held parallel" to the side of the opening which is to be laced up. The lacing is to be crossways, and the lace ends "are fixed by a runner or by an ornament forming a "nipper with or without spring;" they may however be fastened in a bow or knot.

"This system of fastening" may be effected "by means of "an ornament in the form of buttons." The button has underneath it "a cavity in the form of a hollow mushroom, in "which is soldered a ring or kind of eyelet" concealed by the button; the shank has at its lower end two parts, which when let in between the fabric and lining may be opened out and flattened right and left. "This arrangement will be suitable "for gloves, and with an india-rubber lace stitched on it will "not be necessary to tie it."

Among the means which may be employed for uniting these eyelets to a band of cloth or to a ribbon "the common eyelet "possesses great advantages;" this may be punched out of the shank during the manufacture. A piece is cut out of a band of brass or other metal; one end is punched out to form the common eyelet, and the other end "is rolled and "receives a double curve" to form the tube of the new eyelet.

[Printed, 8*d*. Drawing.]

A.D. 1861, August 3.—No. 1926.

CROSS, JANE.—"Improvements in fastenings for wearing "apparel, and in the application thereof." This fastener is intended to fasten up children's short sleeves by passing it inside the sleeves of the under clothes, bringing it outside the sleeves of the outer clothes, and clasping or otherwise uniting the ends. It consists of an elastic band and an ornamental clasp, one part of which has a hook or projection, the other a corresponding slot.

The band "may be made of two or more folds as an endless "band" and so hook on to the projecting piece of the clasp.

Or it may be a single band folded at the end to form a loop or catch; or the band may have an eyelet fixed in it.

The connection may be effected "in many different ways."

The invention is applicable to "belts, brooches, pins, "bracelets, and all similar articles."

[Printed, 6*d*. Drawing.]

A.D. 1861, August 15.—No. 2031.

BETHELL, John.—"Improvements in the manufacture from "steatite of journals, axle-boxes, and bearings for machinery "axles and spindles to work in, smoking pipes, buttons, "crucibles, and pots for chemical and smelting purposes, and "also of a lubricating compound for railway and other car- "riages." Buttons are made "by simply cutting them out "of the steatite blocks to the forms desired," or by pressing the powder of steatite in suitable moulds. The buttons must afterwards be calcined "in furnaces like pottery-ware or fire- "bricks."

[Printed, 4*d*. No Drawings.]

A.D. 1861, August 20.—No. 2066.

EMES, Hannah.—"Improvements in dress fastenings, which "are also applicable to other purposes." These fastenings are "somewhat similar to and to be used in place of ordinary "hook and eye fastenings;" in some cases the hooks are used "in combination with buttons."

The hook part "is formed in a plane parallel with the "plane" of its loops, and sometimes it "occupies a plane at "right angles" thereto. The hooks are attached (by preference) by threading a tape through the loops and fastening the tape to the under side of the garment; they are hooked into any kind of corresponding eyes or eyelets, or into the shanks of buttons.

In some cases the hook forms an appendage to the button shank; the shank is made with an eye also for threading the fastening tape through. An eye to receive this hook constitutes another part of this invention; it consists of an eye or receiving loop and a looped shank which passes through the garment and is fastened by a tape or by sewing.

[Printed, 8*d*. Drawings.]

A.D. 1861, August 22.—No. 2098.

LANDSBERG, EDOUARD AINÉ.—(*Provisional protection only.*)—"Improvements in porte-robes or buttons for holding up the "skirts of ladies' gowns." This invention is "a very important application" of the button or stud patented by Mr. Landsberg on February 13th, 1860, No. 387; it comprises also an alteration in the button.

The button was described as "provided in the inside with "a spring for causing a braid, tape, cord, string, leather, or "other strap or band, small chain, or other similar tie or "appendix, to coil round a barrel in the interior of the "button" and to uncoil from the barrel and serve "for "attaching the button to another button, stud, or other part."

The braid, &c. is now doubled; both ends are fixed to the barrel, and the remainder forms a loop into which part of the skirt is introduced and kept fixed by a runner or slide.

[Printed, 4*d*. No Drawings.]

A.D. 1861, August 23.—No. 2109.

PLAYER, WILLIAM DREDGE.—"Improvements in the description of buttons commonly known as linen buttons." The shell of these buttons is pierced with two eyeleted holes equidistant from the centre. The metal between the holes forms a bar over which the thread is passed. The eyeleted holes are formed either "by turning back the metal of the "edges of holes in the shell" or by fixing separate eyelets in plain holes pierced in the shell. The eyeleted holes may be shown on both back and front, or on either back or front or be concealed on both back and front, by means of perforated or unperforated discs of linen or cotton. In some buttons the shell consists of two parts, namely a front shell (pierced as before mentioned) and a back part or ring which is fixed into the shell.

[Printed, 8*d*. Drawing.]

A.D. 1861, August 29.—No. 2151.

JANVIER, VICTOR ALEXANDRE.—(*Provisional protection only.*)—"Improvements in fastenings for gloves, belts, and "other articles." One part of the fastening is made with a rack, the other with a tongue or spring, and each with a curved part to hook into the article.

The tongue or spring is caused to engage in the rack "by a "stem, tail, or piece attached to a knob, button, or like contrivance," and by raising this the tongue is released from the rack.

The inventor sometimes uses "a gem or jewel for the upper "or outer part of the fastening."

[Printed, 4*d*. No Drawings.]

A.D. 1861, August 31.—No. 2177.

JONES, John.—"Improvements in clasps or fastenings for "garments, belts, harness, and like articles." This clasp is composed of two wedge-shaped parts, called by the patentee the female and male parts. The former is a flat plate having the sides turned up and bent over and the smaller end bent over or not. The latter (which slides into the former) is flat, except that it has "on its front, or that surface which is "against the flat plate of the female part" when they are joined, a "concave corrugation" to prevent the contact of the threads by which each part is sewn on, each part being pierced with holes for such purpose.

[Printed, 6*d*. Drawing.]

A.D. 1861, September 5.—No. 2208.

EDKINS, Charles. — "Improvements in ladies' dress suspenders." These suspenders are made of wire or sheet metal. When made of wire they are "bent up of one "continuous piece;" the upper portion is either circular or "a circular eye," and the lower portion of the legs admits of several modifications:—

(1) One leg terminates in "an enlarged eye," the other in "a branch or double loop." (2) One leg ends in "a round "or other suitably formed loop;" the other is rounded and finishes in a knob "which enters concentrically through the "loop." (3) One leg ends in a head of any shape, the other in "a horizontal open hook" for the head to rest in when in use. (4) Both legs end in a loop or eye, the one larger than the other so that the smaller may "pass through it." Each suspender carries a slide, and it is preferred to roughen the outside of the legs.

Suspenders made of sheet metal also admit of modifications:—(1) The metal is bent into by preference a "rectangular form." The leg ends in a hook pierced with a hole "for a plunger to "pass through." The plunger is drawn up by a slide and forced down by a spring. (2) The leg is formed with projections at the lower end; a slide on the leg is formed at bottom with projections and a hook. (3) The leg ends in a round hook; the slide carries an arm which can be pushed in between the leg and the extremity of the hook. Each suspender carries a ring at the top.

About four suspenders are attached to the skirt of a dress; they are "attached to or wreathed over a cord" so arranged around the waist that "by pulling two strings" the skirt will be raised.

A.D. 1861, September 13.—No. 2277.

HASELER, GEORGE CARTER.—"Improvements in lockets." The first improvement consists in making lockets "with a "secret ornament or inscription plate, or other ornamental "design:"—The lids of the locket are jointed to a ring or rim, and the ornament is "attached to the inside of the ring "or rim." Sometimes the ring or rim is dispensed with, and the joints of the lids are attached "to the sides of a prolonged "part of the ornament."

The second consists "in securing portraits or other orna-"mental designs in glassless frames or leaves of lockets." The portrait or design is slid through an aperture in the end or side of the frame, and the aperture is closed by means of a plate, slide, or bolt. Sometimes the portrait or design is gummed or cemented to a plate, and the lower part of the plate fills up the aperture.

The third consists "in constructing 'book lockets' to open "from both edges, and requiring and having a clasp or fas-"tener on both edges."

The fourth and last relates to a hinge for book lockets:—A part of the hinge is fixed to each leaf and lid; the parts when riveted together "constitute the entire back of the locket "when closed."

[Printed, 8*d*. Drawing.]

A.D. 1861, September 21.—No. 2368.

DESBOROUGH, SPENDLOVE.—"Improvements in the manu-"facture of pins for hair, dress, jewellery, and other pur-"poses." The patentee makes his pins from "spirally-formed "wire;" he anneals the wire, coils it round a mandrel "in a "similar manner to that employed in the manufacture of "coiled springs," draws it out so as to produce "an elongated "spiral," and cuts it into suitable lengths. He then points the wire at each end and bends it to form a hair pin. He uses this spirally-formed wire also for the stems of dress and ornamental pins and brooches.

[Printed, 6*d*. Drawing.]

A.D. 1861, October 5.—No. 2488.

EDWARDS, JOHN.—"Improvements in the manufacture of "buttons." The patentee claims the invention of coating with German silver buttons or parts of buttons made of brass, copper, or zinc; the metals are coated in the ordinary manner "by rolling together, being what is termed fire plating."

He claims also the application of a metal face to bone buttons "when such buttons are made with a projecting shank or "neck for the button-hole to work on."

[Printed, 4*d*. No Drawings.]

A.D. 1861, October 10.—No. 2532.

STEVENS, JAMES.—(*Provisional protection only.*)—"Im-"provements in connectors and adjusters for connecting "and adjusting crinolines." Clips for partially or entirely clipping the ends of the material of which the hoops are made are formed by bending sheet metal and dividing it into springs. These springs are barbed so as to readily admit the ends but to prevent them from receding.

Some clips are made with "a tendency for the edges or part "of the edges where they join together to bear against the "inside of the front plate." This plate being roughened, sufficient pressure will be obtained to prevent the ends of the material from separating.

Others are made with "an additional plate also roughed;" the ends of the material are held "between the roughed "surfaces of the inside of the clip and the additional plate."

The additional plate may be curved to form a spring, so that a spring need not be made in the clip.

"Springs may be formed of wire similar to what are called "mouse-trap springs;" in all cases means must be provided for relieving the springs so as to allow the ends of the material to be readily drawn out or adjusted.

[Printed, 4*d*. No Drawings.]

A.D. 1861, October 14.—No. 2561.

TAYLOR, Benjamin, and **EDKINS**, Charles.—"Improvements in porte-robes or dress suspenders, and also in "apparatus for the suspension of curtains, draperies, and "other articles." These suspenders form part of or are combined with a waist belt of any description. The belt is perforated with eyelet holes; a cord is threaded through the holes in loops, and "any description of hook or dress clip" is attached to the loops. Each loop passes through a bead or runner, "thus keeping together the two parts of the loop at "the head of the hook."

A small chain and spring hook may be attached to each eyelet hole, thereby dispensing with the cord.

[Printed, 6*d*. Drawing.]

A.D. 1861, October 19.—No. 2610.

LEPEINTEUR, Théophile.—"Improvements in fastenings "for gloves, belts, and other articles." "The main feature "of this invention consists in forming pins, teeth, or shanks "upon metal plates or studs and passing them either with or "without washers through the material;" they are then bent over and fixed securely without stitching.

The patentee describes three arrangements:—1. Pins on a metal plate are passed through the material from the inside; a washer is placed on the pins, and then a cap. The cap is "formed with a projecting part" through which the pins are passed and afterwards bent back. The cap is turned over the ends of the pins and the fastener is complete. There is a similar fastener on each side of the article; one of the caps is formed with a hook and one of the washers with an eye; or an eye may be formed in the other cap, so that "the caps may be "attached without an internal washer."

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2. A hook or eye forms part of a plate of metal "having a " hole in the centre and placed on the exterior of the glove." Above the plate is another plate carrying shanks, which pass through the hole and through the material and are then bent back. Or "the shanks may form part of the hooked or slotted " plate;" or "the hooked part may be used singly and an " eyelet formed in the material."

3. A stud is formed with pins which pass through holes in a washer, then through the material, then through holes in another washer, and are then turned down over the latter.

[Printed, 6*d*. Drawing.]

A.D. 1861, October 25.—No. 2673.

ARON, Lazare.—(*Provisional protection only.*)—" Improve- " ments in cravats and their mode of attachment." The inventor employs for the attachment of cravats "a ring or " slipping noose having one or several fixed or jointed small " bars through which pass the two ends of the cravat, the " small bars forming the point of support." The ring or noose "may serve as an ornament" and even be "furnished " with a pin."

There may be applied to the cravat by means of buttons or other fastenings "pieces of stuff arranged in such a manner " as to produce the effect of a long cravat."

"I can also," says the inventor, "use ends of a cravat " imitating a knot, rosette, or other ornament, and retain only " the body of the cravat, which it is easy to tighten by means " of the ring or noose."

[Printed, 4*d*. No Drawings.]

A.D. 1861, October 30.—No. 2729.

BROOMAN, Richard Archibald.—(*A communication from Henri Jesson.*)—(*Provisional protection only.*)—" An im- " proved steel button and method of manufacturing the same." This invention relates to the manufacture of "a spherical steel " button with a shank and in a single piece without soldering."

The shape of the blank which forms the button and shank is shown in the first figure of the annexed sheet of drawings. The blank is subjected to the action of four matrices and punches, the second punch being described as a "hollow " *conical tool*," and the fourth as "made to round off the

" angles" of the shank and at the same time "to pierce a " hole through it." The blank is thus formed into a " finished button" and is ready for polishing.

[Printed, 6*d*. Drawing.]

A.D. 1861, October 30.—No. 2730.

WATSON, Edward.—(*Provisional protection only.*)—"An " improved fastening for buttons, studs, solitaires, brooches, " civil and military decorations, and other like articles." The fastening consists by preference of "three bent pointed prongs " or pointed hooks set about equal distances apart round the " back or inside of the button or other article." Two or more prongs may be used. The prongs "are inserted one after the " other into the scarf or other garment to which the article is " to be fastened."

[Printed, 4*d*. No Drawings.]

A.D. 1861, November 1.—No. 2746.

SMITH, Andrew. — (*Provisional protection only.*)—"Im- " provements in producing or delineating ornamental lines " and figures on metal and other surfaces." The inventor applies his invention to "mounts for all kinds of fancy cabinet " work, brooches, clasps for waistbands, and other similar " articles."

On November 14th, 1853, Letters Patent (No. 2639) were granted to William Smith for a ruling machine "used in the " ornamenting of Scotch fancy wood work, and known in the " trade by the name of a checking machine."

The new application consists "in operating with a cutting " point in place of a mathematical pen." The article to be ornamented is fastened down on the carriage of the machine, and the workman "proceeds to produce straight or waved " lines by using the cutting point."

The inventor designates this style of ornamentation "Scoto- " damascene work."

[Printed, 4*d*. No Drawings.

A.D. 1861, November 18.—No. 2890.

CLEMENTS, James Moore.—(*Provisional protection only.*) —"Improvements in the making or manufacturing of certain " parts of garments for either sex, likewise in the manner of

" preparing the same for sale, as also an improved button to " be attached to garments without sewing."

The first improvement relates to linings "applicable for " ladies' petticoats, bonnets, dress trimmings" and "gentle- " men's coats."

The second relates to "vest back and stay shoulder straps." Two rollers are employed, one smooth, "the other so divided " with steel blades" that a piece of fabric passing between them is cut into the shape required for such straps. The straps thus cut out are passed through a machine "to crease and " stretch the fabric into the shape desired;" they are so creased "that one row of stitching in the centre shall pass " through the three thicknesses of the material." The thicknesses may be sized, folded together, and united by passing between hot rollers. Some straps are woven.

The third consists in making "the tops and bands of " trousers" distinct from the leg portion. These parts are made with pockets, buttons, button holes, &c. "ready to be " attached to the legs."

The buttons are made "with a flexible tuft at the back," or with holes in the back shell. The shank is a prong "of two " or more points;" these are passed through the cloth and " turned down concentrically so as to bear on the inside of the " button."

[Printed, 4*d*. No Drawings.]

A.D. 1861, November 22.—No. 2935.

DAVENPORT, THOMAS WILLIAM, and COLE, SAMUEL.—" Improved compositions to be used in making buttons, beads, " miniature and picture frames, and other articles susceptible " of being moulded in a plastic material." The ingredients for the compositions are paper or papier maché (by preference " waste papier maché, such as broken trays"), or dried paper pulp, reduced to fine powder and mixed with some or all of the following, namely, glue, paste, gas tar, black tar, varnish, copal varnishes, pitch, resin, india-rubber or gutta percha, whiting, gold size, and a small quantily of oil.

For buttons, dress ornaments, and other like articles which " require a very strong material" and do not "admit of " strength being given by bulkiness," the ingredients and proportions preferred are, 28 lbs. of varnish (tar varnish for black, otherwise nearly colourless varnish), 5¼ lbs. of gutta percha, 7 oz. of resin, 3½ oz. of any fat oil, and 84 lbs. of powder black or powder colour according to circumstances. The ingredients when well mixed together "will form a pasty " compound capable of being pressed and moulded in dies " into any desired form and pattern."

For uses requiring "greater toughness and capacity for " manipulation," such as the manufacture of " twisted " brooches, bracelets, chain links, and similar ornamental " articles," the following are preferred :—3½ lbs. of wheaten flour, 1½ lbs. of glue, 7 lbs. of pulverized papier maché, 2 oz. of sheet paper reduced to a pulp, and ½ lb. of powder black or colour. The glue is to be melted ; the other ingredients to be added gradually, and the whole to be "combined into a " state resembling dough ;" in this condition it may be " worked into any desired form, and left to harden or stoved " if requisite."

For the purpose of increasing bulk, "the other ingredients " before enumerated may be added to either of these compo- " sitions."

[Printed, 4*d*. No Drawings.]

A.D. 1861, November 27.—No. 2996.

AMPHLET, SAMUEL.—"Improvements in ornamenting sur- " faces," especially the surfaces of "brooches, boxes, spectacle " and other cases." The ornament consists of the combination of (by preference) a photograph with "tartan or Scotch plaid " patterns or imitation tortoise shell."

The back ground of the photograph is cut away ; the surface of the article to be ornamented is ruled with a tartan or Scotch plaid pattern, and the photograph is fixed therein with adhesive material. The whole is then sized, varnished, and polished. For imitation of tortoise shell the surface is suitably painted, printed, stained, or otherwise coloured.

Or paper is ruled with the pattern (or painted or otherwise coloured to imitate tortoise shell) ; the photograph is secured to the paper, and the paper to the surface to be ornamented.

[Printed, 4*d*. No Drawings.]

A.D. 1861, December 12.—No. 3114.

GODFREY, WILLIAM WIGGINS.—"An improved fastener or "protector for Albert guards." This protector, "forming a "tasteful finish to the chain as well as being perfectly secure "and much more ornamental than the hook or plain bar now "generally used," consists of a shield or other device combined with a bar or stud. When a bar is used, it is made "tapering from the centre piece, leaving the lower part "straight." From the middle a piece rises and "is made "quite fast to the shield." The bar, "being put horizontally "through the button hole of the waistcoat and then turned "upright, will be tightly held to the waistcoat, the bar being inside, and the shield exposed outside.

A more "expensive and complicated" protector is made by causing the bar "on being slightly turned" to fit or catch "in a click or lock made on or in the shield;" in some cases, where desirable, "a spring can be applied," an arrangement "more applicable to ladies' Alberts, so as to tightly hold to "the garment however slight the texture of the garment may "be."

The patentee does not confine himself to the shape or material of the shield. A key-pipe can be affixed to the bar.

[Printed, 6*d*. Drawing.]

A.D. 1861, December 12.—No. 3121.

BAILEY, HENRY. — (*Provisional protection only.*) —"An "improved button or stud." This button or stud is made in two separate parts similar to the two discs or faces of an ordinary stud. Each part carries a stem of metal, one cut with a male, the other with a female screw. A small eyelet hole is made in the fabric; a part of the stud is applied to each side thereof; and "a perfect fastening will be obtained" by screwing the stems together.

[Printed, 4*d*. No Drawings.]

A.D. 1861, December 14.—No. 3145.

MCDOUGALL, COLIN, and CRANE, JOSEPH.—(*Provisional protection only.*)—"Improved means for raising and supporting ladies' dresses." The dress holders to which this invention relates are worn outside the dress. A cord attached to the ordinary clasps or hooks passes through rings, swivels, or pulleys "fixed and suspended to the belt which encircles the "waist." The ends of the cord are provided with knobs or tassels, "which rest against the belt when the bottom of the "dress is in its lowest position."

[Printed, 4*d*. No Drawings.]

A.D. 1861, December 16.—No. 3158.

BAUMANN, CHARLES.—"Improvements in buttons." This button is so made that it may be attached to the fabric by means of a screw. The stem of the button is bored and tapped, and a disc is formed on the lower end of the stem. A screw made with a large head is passed through the fabric from the back, and screwing into the stem nips the fabric between the disc and the head.

[Printed, 6*d*. Drawing.]

1862.

A.D. 1862, January 11.—No. 86.

WILKINSON, WILLIAM.—(*Provisional protection only.*)— "Improvements in ornamenting and decorating metals, glass, "porcelain, parchment and other skins, and in the materials "and ingredients employed therefor, also in protecting silver "and gold on said materials and on surfaces or plates of glass "or metal, or plates of glass and metal combined, applicable "to works of art, furniture, jewellery, and other articles of a "useful and ornamental character." The design or picture is laid on a sheet of glass; the face is brushed over with a transparent cement composed of gum arabic, white wax, colouring matters, and linseed or olive oil; one side of another sheet of glass of corresponding size is coated with boiled or raw linseed oil; the design is laid on this prepared side, and, after being subjected to gentle pressure, the back is brushed over with boiled or raw linseed or olive oil. The margin of each sheet is coated with a strong opaque paint, which when dry is coated with a cement composed of white and red lead, Brunswick black, boiled oil, and any suitable adhesive substances. The sheets are then connected, and the air is expressed by gentle pressure.

To protect designs on single sheets of glass, any ordinary waterproof varnish is spread over the back of the design, and sometimes the back is afterwards silvered, and the back of the silver is coated with paint. Sometimes polished sheet metal is used instead of silver.

After giving the foregoing description of his processes the the inventor states, "This applies to the ornamenting of "buttons and jewellery."

[Printed, 4*d*. No Drawings.]

A.D. 1862, January 29.—No. 229.

BRIERLEY, John Henry.—"An improved clasp or fastener "for reversible belts, bands, or straps." The patentee calls his clasp "a double reversible clasp;" it may be "connected "from either side" of the belt.

A wire bar is attached to the back of each plate of the clasp. Two hooks are formed out of, or fastened to, one plate, and so arranged that neither "can be seen when worn." To the other plate is secured "a projecting piece of metal" having a groove or slot cut in it "for the purpose of receiving a sliding "bar wider at each end than in the centre portion, and having "an eye at each end." The clasp is connected from either side "by moving the sliding bar."

The belt is made of leather on one side, and of leather and silk on the other, forming with the clasp a complete reversible belt.

[Printed, 6*d*. Drawing.]

A.D. 1862, January 31.—No. 253.

LITTHEHALES, David.—"An improved plastic compound "as a substitute for papier maché." This substitute is made from oatmeal, flour, pea, bean, rye, barley, or linseed meal, or other farinaceous or oleaginous meal, mixed with tar or other varnish until it becomes of a thick pasty consistence; it is then moulded in dies or formed into sheets and dried in a japanner's stove. When perfectly dry and hard, it is saturated with linseed or other suitable oil and afterwards varnished or coloured.

The patentee applies his compound to the manufacture of dress ornaments, bracelets, brooches, necklaces, belt clasps, buttons, earrings, and to a variety of other articles.

[Printed, 4*d*. No Drawings.]

A.D. 1862, February 13.—No. 392.

GREEN, Edwin, and **NEWMAN**, James.—"Improvements "in buttons for fastening and ornamenting articles of dress." The first improvement relates to linen buttons which are made in such a way that "no metal is visible in the finished button," the body being by preference "of a soft ductile metal and "pierced and ring-holed or eyeleted" for the passage of the needle; it consists "in raising or embossing circular or other "forms" on the front of the button to indicate "where the "perforations are." The embossing may "impart any appropriate design" to the front of the button. The improvement is applicable to buttons in which "the back edge or rim "may be of metal."

The second relates to a button for the invention of which Letters Patent were granted to Edwin Green and Joel Cadbury on May 27th, 1861, No. 1325; it consists "in the shape of the "holes" therein described; they are now made "oval or "semicircular, so that the two being placed in suitable "proximity, a parallel bar or nearly so will be formed."

The third relates to "the application of metal ornaments "in the front of covered buttons," and "so pierced in or near "the centre as to form a bar for the thread to ride on." The button is placed between dies so that "the front ornament "may be pressed in, and other portions of the front of the "button raised if desired." Or the metal of the body, "may "be slightly sunk in the centre so as to form a raised rim," within which "two oval, circular, or other shaped pierced "holes may be raised or pierced out and treated so that the "edges may be rounded or turned down or thrown over." The raised rim is thrown over outwardly "so as to lay down "and protect the fabric." The same effect may be produced "by a separate centre portion."

The fourth relates to sewn-through buttons "having a con-"centric eyeleted or ringed hole in the metal portion;" it consists in finishing the button by dies and pressure so as to show on the front or back, or on both, "a raised ring" to indicate "where the needle must be passed through," and in covering the back and edge "in a superior manner by "means of a deflected rim formed in the metal shell or "back."

The fifth (and last) relates to buttons made partly of glass, china, or like material, and partly of metal; the front is formed with a hole in the middle "just sufficient for the needle and "thread to pass through," and the back with a bar for the thread to rest on.

The patentees describe their processes of manufacture "to "enable a skilled workman" "to carry the same into "effect."

[Printed, 10*d*. Drawing.]

A.D. 1862, February 22.—No. 481.

ORAM, George John.—(*Provisional protection only.*)—"A revolving pendant for giving greater security to watches "and lockets against theft." The watch or locket is attached to the bow and pendant by means of "a metal tube or solid "wire" (a tube is preferred) which passes "through the "pendant and case" and forms "an axis upon which the "pendant, or the watch or locket revolves." The security consists "in the pendant, from the fact of its revolving, "offering no resistance," but "turning with a sudden wrench, "which is the usual mode in which watch robberies are "effected."

[Printed, 4*d*. No Drawings.]

A.D. 1862, February 26.—No. 527.

CLARK, William.—(*A communication from Eugène Fauche and Charles Auguste Ravaut.*)—"Improvements in the clasps "or fastenings of bracelets, neck chains, and other articles "of jewellery." Three arrangements are described, each consisting of a spring part and a socket.

In the first, the spring consists of an elastic strip bent so as to form two limbs; each carries a projecting catch, and in one is made a notch "for receiving a thumb or finger nail." The socket is made with projections which retain the catches when the spring is pushed into the socket.

In the second, the spring is a plate "slightly bent and "elastic" and made with a groove and a rim. At the entrance of the socket there is a projection which engages in the groove. For greater security the rim is made so that the spring can be pushed into the socket only "in a slanting direction," and "can only be withdrawn in the same manner."

In the third, the spring is a plate made with openings in it and turned up at the outer end. Inside the socket are pins or projections which take into the openings.

Each arrangement is susceptible of slight modifications.

[Printed, 8*d*. Drawing.]

A.D. 1862, March 4.—No. 586.

ELLIS, James.—(*Provisional protection only.*)—"Improvements in hooks and swivels for fastening chains of all sizes, "and for other similar purposes." The guard is formed "to "resemble a common chain swivel," but "arranged so as to "be attached and united by means which cannot accidently "occur." The link "is cut so close to the stem" which works and revolves in the cap, as to "barely leave space for the cut "point to slide along a rifle groove first on the outside and "afterwards along the inside of a groove in the cap." A screw ferrule "works on the end of the hook" to open or close the space between the end of the hook and the stem, "so as "to form a complete link when screwed up close." The head of the hook, "when raised above the cap in order to detach it, "comes into contact with the link or fastening to which the "cap is suspended;" a groove "on the head of the hook "allows it to pass, so that it may be completely reversed." The point of the hook "has then to be guided along the inner "groove of the cap," and the hook "is thus freed or separated "from the swivel cap."

[Printed, 4*d*. No Drawings.]

A.D. 1862, March 7.—No. 618.

COATHUPE, Henry Bentinck.—(*Provisional protection only.*)—"Improvements in the manufacture of clips, hooks, "and other such like fastenings." Shoe fastenings, and glove and crinoline fastenings, are mentioned as some of the "unlimited" purposes to which these clips are applicable.

Sheet metal is cut out "in the form of the letters **H**, **T**, **Y**, or **X**, or other such like forms ;" the portions "separated from "each other (or a series of such pieces in combination)" are folded or bent in such manner that "one end is formed into a "spike or nail," whilst the other can be used to clip the article requiring to be held.

These clips may be made of various sizes and substances, and the inventor asserts that their strength is "superior to "cast and equal (or nearly so) to wrought metal fastenings."

[Printed, 4*d*. No Drawings.]

A.D. 1862, March 8.—No. 620.

FLETCHER, HENRY.—(*Provisional protection only.*)—"An "improved clip for securing the steel or other expanders of "crinolines to the suspenders thereof." The clips are formed with slots therein through which both the steel and the suspenders are passed ; or the steel "may be otherwise connected "thereto."

A suspender is passed through one slot, then over the steel, and then through another slot ; the edges of the clip are then bent tightly over the steel, thus interlacing the steel with the suspender and effectually connecting them.

[Printed, 4*d*. No Drawings.]

A.D. 1862, March 10.—No. 649.

HENRY, MICHAEL. —(*A communication from the Société Gingembre et Damiron.*)—(*Provisional protection only.*)— "An improvement in preparing hooks and hooks and eyes for "sale or consumption." Boxes, cases, &c. for holding these articles are used as heretofore ; the improvement consists in attaching thereto a sample or pattern hook or hook and eye, so that it cannot "be separated therefrom by the opening "thereof."

The sample is fastened on cardboard or the like ; paper or other substance is stuck on to the back of the cardboard, "so "as to conceal the attaching thread or agent," and the cardboard with the sample thereon is attached to the box."

[Printed, 4*d*. No Drawings.]

A.D. 1862, March 11.—No. 653.

PARFITT, Edward.—(*Provisional protection only.*)—" A " watch protector." A loop or ring " is fixed permanently or " connected at pleasure " to the inside of the watch pocket, and the end of the chain is passed through it and then attached to the watch. " Any attempt to draw out the watch surreptitiously by the chain will be prevented by the ring or " loop."

[Printed, 4*d*. No Drawings.]

A.D. 1862, March 15.—No. 713.

EMANUEL, Harry.—(*Provisional protection only.*)—" An " improvement in the manufacture of ornaments for personal " wear." The inventor substitutes ivory for the " enamels " hitherto used for the bodies, settings, and mountings of " bracelets, brooches, pins, and other ornaments for personal " wear."

A piece of ivory is cut into the desired shape, and is combined " with metals and with gems, real or artificial stone, or " other articles usual for ornaments " by forming in it a recess or recesses, or an opening or openings, and (when required) orifices in the recesses or openings. The gem, &c. is set in a rim of gold or other metal, and the rim is fastened to the ivory with cement, rivets, or otherwise."

[Printed, 4*d*. No Drawings.]

A.D. 1862, March 24.—No. 808.

BRIERLEY, John Henry.—" An improved clasp or fastener " for reversible belts, bands, or straps." The clasp is composed of a metallic plate " of any design or configuration suitable for a belt clasp," a bar of suitable width, and " two " hooks or a double hook, or any other kind of fastening " which will take into a catch. The plate is attached to one end of the belt by means of the bar, and the catch to the other end.

By connecting the belt on the right of the clasp one side of the belt is seen, and by connecting it on the left the other side is seen, thus producing " a reversible belt, band, or strap with " what is termed a single clasp."

[Printed, 6*d*. Drawing.]

A.D. 1862, April 17.—No. 1127.

ABEL, Charles Denton.—(*A communication from Henri Catherine Camille de Ruolz and Anselme Louis Marie Fontenay.*)—"Improvements in the manufacture and produc- "tion of certain alloys containing cadmium." Two series of alloys are described; the first consists of 8 alloys containing different proportions of silver, copper, and cadmium. The second, "particularly applicable to jewellery and the manu- "facture of wire by drawing," consists of the following three:—

First, gold 750 parts, silver 166 parts, cadmium 84 parts. This "gives a malleable and ductile metal of a green "colour."

Second, gold 750 parts, silver 125 parts, cadmium 125 parts. The colour of this is "a yellowish green."

Third, gold 746 parts, silver 114 parts, copper 97 parts, cadmium 43 parts. This gives a metal "of a different shade "of green."

Each of the above-named alloys should be first carefully melted down in a covered vessel, "having a carbonaceous "lining," and subsequently be remelted in an ordinary crucible, "together with charcoal or resin dust and borax." If it should be found "that a considerable proportion of the "cadmium has been volatilized," the alloy should be melted a third time "with an excess of cadmium so as to bring it to "the required per centage."

[Printed, 4*d*. No Drawings.]

A.D. 1862, April 30.—No. 1274.

HICKMAN, Henry.—(*Provisional protection only.*)—"An "improvement in the method of fastening ladies' crinoline "skirts and other articles of wearing apparel, and elastic and "other bands." The fastener proposed to be employed is "a perforated piece of metal made in such shapes or forms as "is required." Being perforated it becomes when applied to tapes, wires, or other substances "immovable and consequently "a more durable and efficient method of fastening than any "now in use."

[Printed, 4*d*. No Drawings.]

A.D. 1862, May 6.—No. 1353.

CLARK, William.—(*A communication from Jean Louis André.*)—"An improved buckle or fastening." This buckle may be used with advantage for uniting the ends of trouser and waistcoat straps, braces, belts, garters, and shoe fastenings; it requires neither tongues nor holes; it will not ravel or tear the material which it is to secure.

The buckle is composed of "a frame in two parts of unequal "length jointed together, having several bridge or tie pieces," "a cross bar or rocking piece" about midway of the larger part, and a leathern loop at the outer end of the larger part.

One end of the article to be fastened is permanently secured "to a bridge piece of the smaller part;" the other end is passed through the loop and alternately over and under the several bridges. The rocking piece "when tension is exerted "on the strap is caused to bear on it its whole width, and so "to retain it in the desired position."

One figure in the sheet of drawings shows a waist buckle "without a jointed end."

[Printed, 6*d*. Drawing.]

A.D. 1862, May 10.—No. 1400.

HASELER, George Carter.—"Improvements in the manu"facture of lockets, and of a new application of parkesine as a "substitute for glass in the construction of lockets and other "articles of jewellery." The first improvement consists in making locket frames ("containing portraits or other designs") loose or separate from the outer case in which they are placed and unconnected with the ring or loop by which the locket is suspended. By this means the frames may be taken out of the locket "without removing the locket or outer case from "the chain when worn as an ornament."

The second relates to a "leaf or frame for book lockets:"—The improvements consist in "forming the same with recesses, "one or more on each side," in "perforating or forming a "rough surface at the back or division plate," and in "fixing "the portraits or other designs thereon by means of cement."

The third and last consists in substituting parkesine for glass in the manufacture of articles of jewellery. Sometimes the portraits, &c. are coated with transparent parkesine after they are cemented to the leaves. Sometimes the portraits, &c. are cemented to pieces of parkesine before putting them into lockets, brooches, or other articles of jewellery."

[Printed, 4*d*. No Drawings.]

A.D. 1862, May 15.—No. 1465.

WALSHAM, Robert, and **WALSHAM**, Josiah. — (*Provisional protection only.*)—"A new or improved sleeve tie " or fastener." A metallic hook is attached to each end of a piece of elastic webbing of rather more than an inch in length; one of the hooks has fixed to it a loop for the reception of the other hook.

The webbing is passed under the sleeve; the hook engages with the loop, and the sleeve is thereby gathered up and secured on or near the shoulder.

[Printed, 4*d*. No Drawings.]

A.D. 1862, May 15.—No. 1476.

GIRARDET, Charles. — (*Provisional protection only.*) — " An improved construction of buckle," whereby "all tendency " of the buckle to slip" will be prevented. The ends of the frame are used as "guides to receive an open sliding frame." One bar of the sliding frame "is pierced to allow of the ordi" nary prongs (which are carried by one of the side bars of the " buckle frame) projecting therein and offering no obstruction " to the sliding of the inner frame." The free end of the strap is passed through the sliding frame, which "is then " moved forward until the fixed prongs enter" the fabric of the strap. Any strain on the strap "will tend to increase the " security of the buckle." The prongs may be carried by the sliding frame, "and enter a cross bar formed on the buckle " frame."

[Printed, 4*d*. No Drawings.]

A.D. 1862, May 19.—No. 1516.

MORRIS, Timothy, **WEARE**, Robert, and **MONCKTON**, Edward Henry Cradock.—"Improvements in obtaining and " applying light and heat by electricity." The patentees state in one part of their Specification that their invention may be applied to jewellery, in as much as they "propose to fuse "together by electricity the joints or ends of various metals, "instead of using the ordinary processes, as a substitute for "jewellers' and other solder, and also to fuse those solders "where it is necessary to use them."

They obtain the required heat by "electricity evolved from "powerful batteries and induction coils, by introducing "spirals of flattened platinum wire or sheets rolled up into "spiral or other coils in such manner as to give the greatest "possible heating surface to them." Other suitable metal may be used. The coils so prepared "are to be inserted into "the liquor or other substances to be heated, and the ends of "these coils then joined to the poles of the battery."

[Printed, 4*d*. No Drawings.]

A.D. 1862, May 26.—No. 1572.

CLARK, William.—(*A communication from Henry Dupont.*) —(*Provisional protection only.*)—"Improvements in the "manufacture of buttons, and in the mode of fastening the "same." These buttons are secured to fabrics "by means of "screws" without any sewing.

The button is composed of (1) a covered disc of wood or other material; (2) a shank formed of a hollow tube having an interior screw thread, a screw at one end for fixing to the disc and a grooved flange at the other end; (3) a socket, "hollow "like the shank," and made at one end with a screw which enters the shank, with "a space" in the middle, and with a groove in the other end; (4) a pin made with a large head and with a stem "of a conical form with a small part" in the middle for entering the groove in the socket.

Mode of fastening:—The disc, shank, and socket being in position, the pin is thrust through the fabric into the socket; the disc is turned, and the fabric is secured between the head of the pin and the flange of the shank. The shank "is fur- "nished with grooves to prevent the button becoming loose "or detaching itself."

[Printed, 6*d*. Drawing.]

A.D. 1862, June 14.—No. 1767.

LANCELOTT, James.—"Improvements in the manufacture "of ornamental chains from sheet metal." Each link is formed "of two separate blanks of different form, which blanks "are afterwards soldered together." One of these blanks (termed the outside blank) is pierced with three, four, or more perforations; the other (or inside blank forming the upper portion of the link) is made with as many arms as there are perforations in the other. Both blanks are domed or cup-shaped, and in making the chain "the domes are placed in "opposite directions."

Process of manufacture :—Take two outside blanks and set them "one above the other with their perforations in line." Place an inside blank "within the uppermost outside blank "with its arms placed in the perforations of both outside "blanks." Close in the undermost outside blank slightly "so as to secure within its perforations the extremities of the "arms of the inside blank." Place a third outside blank on the top of the part thus formed and a second inside blank within it having its arms within the perforations of the two uppermost outside blanks. "Close in the next outside blank "as before," and repeat the operations to any required length. Solder the extremities of the inside blanks "to the topmost "edge of the perforations of the outside blanks;" pass the chain through a draw plate, and finish it "in the usual way."

Another process :—Perforate the middle of the outside and inside blanks, and turn up the outside perforated portions and the ends of the arms at right angles, so that the latter can "just slide or fit within the outside blanks." Lay out the blanks in pairs, each outside having an inside within it, and "the ends of the arms of the inside blank passing through "the perforations" of the outside one. Place the pairs on a mandrel by means of the central perforations; keep the outside perforations in line; press the ends of the arms "a little way "within" the outside blanks; solder the links at this point, and withdraw the mandrel.

[Printed, 8*d*. Drawing.]

A.D. 1862, June 17.—No. 1794.

CLARK, WILLIAM.—(*A communication from Pierre Denis Hautecloque.*)—"Improvements in the manufacture of buttons, "and in apparatus for the same." These buttons are made of porcelain, bone, india-rubber, or other substance "capable

" of being moulded and stamped either in a heated or cold " state, and whether in a soft paste, or dry and pulverized, or " in a mass;" they are provided with a central hole which communicates with two or more openings on the under side, and the parts left between the openings form a bar or bars " contained within the button itself and of the same material." Some buttons are made with a shank, "with or without a " through hole, and with a bridge piece contained in the " shank," or with any number of holes in the shank. Others are made of metal " with a single hole and one or more bridge " pieces made of one or more parts either solid or hollow," and riveted, soldered, or otherwise united.

The apparatus described consists of a moveable die "worked " by a lever or other press," a die fixed to a foundation plate, and a matrix "fitted in the foundation plate above the fixed " die." The "lower disc" of the fixed die is pierced at its centre and "has inclined grooves" on each side; the "second " disc" is furnished with two tools or dies, so that two buttons may be made "by a simple stroke of the press." Each tool is tubular, screwed at one end into the disc, and solid at the other end which is "of the form desired for the under side of " the button;" in it are "inclined holes" for the admission of pins "to form the bridge piece of each button," and a hole in the centre for the reception of a rod which rams up the material for forming the bridge piece. The pins are carried by double-jointed levers connected to the lower disc; they have each "at the upper part a semicircular space, so that " their extremities when united form a small square with a " cylindrical hole." The upper dies are each "formed of " a central rod" terminating in a pin "for forming the centre " through hole;" on the rod is a socket, the lower end of which is of solid metal, "the exterior surface being of the " form to be given to the top side of the button;" the solid end "has a hole at its centre for the passage" of the pin.

The connecting parts, the action of the machine, "the " various modifications in the same," and the process of making a button and of disengaging it from the machine, are described in the Specification.

[Printed, 1*s.* 2*d.* Drawings.]

A.D. 1862, June 23.—No. 1842.

WILSON, Thomas.—"A new or improved dress fastening "which said fastening is also applicable to the fastening of "bands and belts in general and to other like purposes." This fastening consists of two parts, one of which is sewn to the outside of the edge of one part of the dress, the other to the inside of the other part. One part is a flat piece of metal cut into a shape somewhat resembling a horseshoe; it is made with a projection on the outer side of each free end and with one at the arch or cross piece; it may however have perforations round the outer edge instead of projections. The other part is a disc of flat metal or a button which is sewn to the dress by means of perforations in its middle; or it may be made with a bar "raised out of the plane of the sides" thereof somewhat less wide than the space between the sides of the other part of the fastening, and having a shank or cross piece for fastening the threads to or around.

When the parts are sewn on, the disc is passed over the other part until it arrives at the open end, when it "is inserted "under the said open end," and "drawn towards and pressed "against the curved junction." The parts of the fastening are concealed when they are connected together by the overlapping edge of the dress.

In applying the fastening to belts it is preferred to attach the parts to the belt ends by wires or tongues; these are passed through the material and clinched.

[Printed, 8*d*. Drawing.]

A.D. 1862, July 14.—No. 2015.

TAYLOR, Eliza.—(*Provisional protection only.*)—"Improvements in the manufacture of buttons." These buttons are attached to fabrics without sewing. The centre of the body is perforated; the stem of a shank (separate and formed with a head) is passed through the perforation, then through two plates (with the fabric between them) and finally is secured to the outer plate "so as to prevent its drawing through." The inner plate is caused to press the fabric by means of "a raised shoulder or collar" on the stem of the shank.

Shanks fixed to button bodies may be secured to fabrics in like manner. In covered buttons the shank passes only through a hole in the middle of the back.

[Printed, *4d.* No Drawings.]

A.D. 1862, July 25.—No. 2118.

COMFORT, Ebenezer. — (*Provisional protection only.*)— "Improvements in watch protectors." A loose ring is attached to "a small metallic compound ring and bar;" the loose ring enters the pocket through an opening in the lining, the bar "remains behind and outside the pocket." The watch chain is passed through the loose ring and is then put round the neck or through a button hole of the vest.

Instead of a bar a button or disc may be used; or a number of metallic slips (opening and shutting like a fan), which when shut "could be drawn through the pocket with the ring and "watch;" or bars hinged to a central box, presenting the appearance of "the box and spokes of a wheel" and kept extended when in use by springs.

[Printed, *4d.* No Drawings.]

A.D. 1862, August 11.—No. 2244.

LANCELOTT, James.—"Improvements in the manufacture "of ornamental chains from sheet metal." The object of this invention is to make by machinery chains "in which differently "formed blanks are used." Each link is composed of an outside and an inside blank; the former has perforations (the number varying with the pattern), the latter as many arms as there are perforations in the former. In making a chain the perforated portions of one blank are bent upwards so as to form a cup, and another similar blank is placed above "with "its perforations in line with those of the blank beneath." An inside blank is then placed "in the topmost outside blank "in such wise that its arms pass through the lower part of the "perforations of this topmost outside blank and the upper "part of the perforations of the blank immediately beneath, "the top of which must then be slightly closed inwards, the "better to secure the arms of the top inside blank" within its perforations. During the formation of the chain "a hori-

" zontal bar must be introduced into the open space between " the bottom of the outside blanks" in order to keep them the required distance apart. The blanks are cut, and the foregoing operations are performed, by the machinery described in the Specification. The ends of the arms require to be soldered to the tops of the perforations, and the soldering may be effected during the manufacture, for "if desirable a plate " of solder may be placed above the metal" from which the inside blanks are to be cut.

The machine "is provided with ordinary feed rollers," and " the movements of the various parts are produced by ordinary " mechanical devices." Two levers work an upper and an under slide which carry a piercing punch and a die. Between the slides is a horizontal bolster wherein is seated a cutting bed. These parts are for cutting out the outside blanks. On the left side of the machine a lever works a slide which carries a punch. In front of the machine is placed a block in which a carrier is situated, and on which is a cutting die; this with the punch cuts out the inside blanks. The carrier "has a " perforation at its working end of the shape of the outside " blank;" this perforation "does not extend of its full size " through the whole thickness of the carrier, but decreases " in diameter when near the top surface." In the block and beneath the carrier is another block, in the face of which is a circular die "having a perforation the size of the full formed " chain, which perforation enlarges towards the surface until " it assumes the form" of the outside blank; it is slotted to admit the passage of a slide through which passes a "vertical " slide," the upper portion "forming the horizontal bar " which interposes between the links of the chain." The punch which aids in cutting out the inside blank "continuing " its descent presses the two blanks through the carrier" into the circular die, "pressing down beneath the blanks" the horizontal bar.

The Specification contains a full description of the various parts of the machine, of the action of the machine, and of certain modifications which the patentee prefers when making a chain either of a different pattern of blank or "from blanks " having a greater number of arms and perforations."

[Printed, 2*s*. Drawings.]

A.D. 1862, August 11.—No. 2245.

CHAMPION, Marie Honoré.—(*Provisional protection only.*) —"Self-closing buttons, fastening without thread or needles." The shank is "bent at right angles" and pointed at one end. When the shank is fixed to the body of the button, it is passed through the fabric "up to the bend or elbow;" the point enters "a small spring apparatus on the other side of the " fabric," and the spring pressing the elbow "prevents its " withdrawal." If the shank is separate, the end which is not pointed carries a small disc; the point is passed through from the reverse side of the fabric into an opening in the body of the button; "this opening is furnished with a spring which pre- " vents the exit of the shank."

[Printed, 4*d*. No Drawings.]

A.D. 1862, August 14.—No. 2284.

WILSON, Charles Edmund.—(*Provisional protection only.*) —" "An improvement in buckle fastenings for braces and " belts." The improvement consists "in forming a box or " hollow case on the bottom of the flap of the buckle to " receive a spring catch formed in a piece with or fixed to a " plate." The brace ends are attached to the plate; in belts one end is attached to it. "Instead of unbuttoning the tabs " on the brace ends, as at present, the brace is released by " withdrawing the spring catch from the case on the buckle " flap;" the brace is attached "by simply inserting and " engaging the catch in the case."

[Printed, 4*d*. No Drawings.]

A.D. 1862, August 21.—No. 2340.

BOUBÉE, Adolphe.—(*Provisional protection only.*)—"An " improved veil protector" to prevent the veil of a bonnet from being lost or blown away. This protector is a small elastic cord or band, the ends of which are passed through ornamental tags, claws, &c. furnished with hooks.

When the veil is adjusted on the bonnet, the cord is stretched round it, and the hooks "are then brought to bear upon the " cheeks of the bonnet."

[Printed, 4*d*. No Drawings.]

A.D. 1862, August 27.—No. 2381.

NUTTING, John George.—"An improvement in the manu-"facture of buttons." This improvement is applicable to all buttons made with metal shanks, but especially "to the metal "buttons used for soldiers' clothing." The shank is loose in the back of the button so that it "may be pushed back into a "recess made in the back" and will therefore not "be liable "to cut the clothing when the latter is tightly compressed" and "packed for transport."

The face of the button is "concavo-convex;" the middle portion of the back is countersunk or hollowed out and perforated with two holes; the shank is staple-shaped; the prongs are passed through the holes and bent back. When the face and back are put together, the shank may be pushed back into the hollow of the button or be drawn out to project beyond the back.

[Printed, 6*d*. Drawing.]

A.D. 1862, September 1.—No. 2420.

EDGE, William Charles.—(*Provisional protection only.*)—"Improvements in the manufacture of Albert chains and in "the mode of securing the same to the vest of the wearer." The inventor makes a ring at or near the middle of the chain; it is so arranged that "the ends of the chain can easily be "released," being constructed with a small hinged portion which is kept in place by a spring. The ends of the chain are inserted by pressing the hinged portion inwards. "To fix it "to the vest, the chain is passed through the button-hole, and "the end put on the break ring." An ordinary hook or fastening may be added, "but it is not necessary for the safety "of the chain."

[Printed, 4*d*. No Drawings.]

A.D. 1862, September 3.—No. 2438.

ATKINSON, William Henry. — (*Letters Patent void for want of Final Specification.*)—"Improvements in studs or "fastenings adapted to holding together parts of shirt fronts, "wristbands, collars, gloves, and other articles of wearing "apparel." These studs are so made that "a simple round

" eyelet hole will alone be necessary in place of the long " button hole now used to receive such studs."

The stud is made in two parts; the stem of one part is " hollow and with an internal neck or shoulder adapted to " receive a stem attached to the other part of the stud, which " is held therein by means of a spring, with a notch or notches " acting on the neck or shoulder of the hollow stem, and " capable of being readily acted upon to release them."

In another arrangement the stems are held one within the other by screwing "aided by spring pressure."

In another a dovetail piece on one stem slides into a recess in the other and is retained therein by a spring.

[Printed, 4*d*. No Drawings.]

A.D. 1862, September 6.—No. 2467.

RICHARDS, WILLIAM ANTIL.—"An improved fastening for " purses, pocket books, bags, cigar cases, books, wearing " apparel, jewellery, and other articles." One part of this fastening is a stud or pin, notched or recessed at the sides, and mounted on an ornamental plate. The other part is composed of three plates and bow springs; the bottom and middle plates (with the material to be united between them) are joined together by pins; the top plate slides on the middle one. The bottom plate and the material are perforated to admit of the passage of the stud; the middle plate has an opening in it and carries the bow springs. The top plate has on its under surface a hollow projecting piece cut with a slot key-hole-shaped, and formed at its sides with lugs which press against the springs and keep the plate in position, but allow it to slide to and fro in the opening of the middle plate.

The stud is passed through the openings in the bottom and middle plates, and through the wide portion of the key-hole-shaped slot; the top plate is slidden down until the narrow portion of the said slot embraces the recesses, when the fastening is complete.

To make the fastening "more expansible," several orifices with narrow slots between them are made in the projecting piece, and a corresponding number of openings in the bottom plate and the material.

If the material is sufficiently strong, the bottom plate may be dispensed with, and the opening in the material may be protected by an eyelet or rim. A knob or other contrivance may be attached to the top plate.

[Printed, 8*d*. Drawing.]

A.D. 1862, September 10.—No, 2488.

HANDS, FREDERIC, and HOLLAND, HENRY.—"New or "improved compositions for the manufacture of black orna- "ments, such as brooches, bracelets, earrings, and other "ornaments usually made of jet, which said compositions may "also be applied to the manufacture of various other articles." The ingredients used are "jet or scrap jet" reduced to a very fine powder, varnish (by preference black or brown tar varnish or the ordinary black varnish of commerce), india-rubber, gum (by preference gum arabic), and "for large or bulky articles" black oxide of manganese or other black pigment, such as drop black, in addition to the powdered jet or in place of a portion thereof.

The proportions preferred for the manufacture of brooches, buttons, &c. are (by weight) 30 parts of powdered jet, from 1 to 3 parts of india-rubber dissolved in coal naptha or an essential oil or liquefied by heat alone, 1 part of gum dissolved in a very small quantity of water, and 2 parts of varnish. The ingredients are mixed and heated, and it is preferred to incorporate the mixture while hot in an ordinary pug mill. When the composition is cool, it is rolled out into sheets, and is then ready for cutting up into pieces as required. As the composition remains plastic after it has become cold, it is used in a cold state when moulded into articles made by moulding. The articles when moulded or otherwise made require to be hardened by stoving at a somewhat higher temperature than that required for japanned articles.

Mucilage made from Irish moss, isinglass dissolved in water, rice flour boiled with water and gum, or a mucilage obtained by boiling together gum, isinglass, and Irish moss, may be used instead of gum arabic. For the manufacture of articles to be inlaid with pearl, gold, or silver, the powdered jet is made into a plastic mass with isinglass dissolved in alcohol, without varnish, gum, or india-rubber.

[Printed, 4*d*. No Drawings.]

A.D. 1862, October 7.—No. 2705.

ASTON, William.—(*Provisional protection only.*)—"Im-
" provements in the manufacture of buttons for ladies' and
" gentlemen's wear." The first improvement consists in adapting revolving beds to the process of fixing together and closing the parts of covered buttons. The beds are "divided, timed,
" and simultaneously put in motion," so that one part of the button may be put into part of a die in the top bed and the other part into a corresponding part in the lower bed. As the beds partially revolve, the two parts of the dies come opposite each other and stop "until the closing tools descend" and fasten the parts of the button together. By the time this is done corresponding parts are laid in the succeeding parts of dies, so that when the tools are raised, the beds will again move round until the parts of dies, &c. are in position for the closing tools to descend again. If the button "involves from its make
" more operations than before described," additional beds (one or more) are required having suitable parts of dies formed or placed in them.

The second consists in applying to buttons "covered on the
" edge" and faced with woven fabrics "a circular or other
" shaped metal front smaller than the general diameter of the
" button so as to show a covered edge around the metal part."
This metal front is ornamented and pierced so that the covering of the button may appear through the piercing.

[Printed, 4*d*. No Drawings.]

A.D. 1862, October 9.—No. 2725.

JOHNSON, John Henry.—(*A communication from Victor Emanuel Tamisier.*)—(*Provisional protection only.*)—
" Improvements in polishing precious and other hard stones,
" and in the machinery or apparatus employed therein." The stones are polished "without the intervention of polishing
" powders or substances of any kind."

The polishing wheel "is composed of fine grit stone," and the dust is removed from the stone "by a ventilator or brush
" slightly wetted being occasionally applied to the wheel."
The wheel is mounted on a vertical spindle; it is driven at the rate of about 100 revolutions per minute. The wheel is actuated by a strap and driving pulley, and the spindle "is

" steeled at the foot" and works "in a steel footstep bearing." A casing surrounds the wheel, projecting slightly above its surface; beneath the wheel is a hopper "which directs the " water from the surface into a reservoir below." The wheel can be instantly stopped by means of a clutch.

The material to be polished is contained in a square holder, but is capable of rising or falling therein so as to "accommodate itself to any undulations in the surface of the wheel." The holder "is fitted to a radial bar which is secured to the " edge of the surrounding casing."

In polishing material, such as "jasper rock of the dimensions of about 4 inches in length by 2½ inches in width and 1½ in thickness," no pressure beyond that of the weight of the piece will be required; but "for smaller sizes a slight " pressure should be applied."

[Printed, 4*d*. No Drawings.]

A.D. 1862, December 8.—No. 3287.

HUDDART, GEORGE AUGUSTUS.—"Improvements in buttons," namely, "pearl, ivory, bone, and other like buttons (not having " metal heads)" and "cloth or linen buttons." The shank is so constructed that it can be fastened to the button head and to the fabric by one pressure; it is a short solid cylinder of soft brass or other metal, "hollowed slightly at its extremities to allow of their readily spreading under the " pressure of a pair of nippers" and provided with a flange at about the middle of its length.

In buttons of pearl, &c. one end of the shank is thrust into the button head, and the other through the fabric; a washer is placed on the projecting end, and a single pressure expands one end in the head and the other upon the washer; the fabric is nipped between the flange and the washer. As a modification, the lower end of the shank may be tapped, and a clamping screw be used instead of a washer.

In cloth buttons, the centre is pierced for the passage of the upper end of the shank. After the ends are thrust through the button head and the fabric, a washer is put on each end, and pressure is applied as before.

[Printed, 6*d*. Drawing.]

A.D. 1862, December 17.—No. 3379.

HUDDART, GEORGE AUGUSTUS.—"Improvements in buttons." This invention is considered by the patentee to be an improvement on the one for which he obtained Letters Patent dated December 8th, 1862, No. 3287; he is now enabled to apply the principle to "other kinds of buttons" than those described in the Specification of his former Patent, "to simplify to some "extent the construction of buttons attached by pressure," and "to improve the appearance of certain of the buttons when "so attached."

In metal buttons the head is formed with a stem or shank projecting from its under side and hollowed out at its lower end. The stem when thrust through the fabric has applied to it a disc "having a countersunk recess to receive the end," and with pressure the extremity of the stem will spread and hold fast to the disc.

In covered buttons "having a strong metal back," the back is formed with a stem similar to that of the metal button.

In pearl, bone, &c. buttons, the stem is formed as in the former invention, the outer end being received into a countersunk disc instead of being expanded on a washer.

In cloth or covered buttons, the cloth and the shells are perforated in the middle to receive the upper portion of the stem. The stem is made with a head which lies on the top of the cloth; the lower portion after passing through the fabric is secured by pressure as before in a countersunk disc. Sometimes the back shell only is perforated; the upper end of the stem is passed into the hole and is expanded therein by pressure.

[Printed, 8*d*. Drawing.]

A.D. 1862, December 29.—No. 3461.

TAYLOR, JOHN GEORGE.—"Improvements in dress fasten-"ings and in the ornamenting thereof." The ornaments used are "balls, tubes, olives, or other forms of ornaments per-"forated through."

In dress and shawl pins the back of the pin is passed through the perforations. Or the ornaments are threaded on to a wire, and the wire is affixed to the back of the pin.

"Bars and crochets or hooks for chains" are ornamented in the same way.

Another part of the invention relates to studs or buttons composed of two or three pieces of metal :—When two pieces are used, the shell is made with an aperture in the back; the shank is "a straight piece of metal with slits, and slightly "conical, or in any other suitable form." The slitted portion is thrust through the aperture and spread out in the back of the shell. If three pieces are used, the shank is secured in the shell as before; the third piece is passed through the shank; the ends of the third piece "are then brought together and "passed through the material, after which they are opened "out."

Other buttons are made "with two or more openings" in the middle of the shell; a piece of metal is passed through the openings; the points of the piece are brought together, &c as before.

Others consist of "a disc pierced in the centre;" an eyelet is passed through the material and fixed therein; another eyelet is passed through the piercing and the fixed eyelet "and then "fastened by pressure."

Another part consists of a method "of fastening cords together and concealing the fastening by an ornamental ball "or cone :"—The ends of the cord are fastened together; a hook "is also formed and the cord is passed into it;" the other end "is passed through the ball or cone and then "turned." This part may be applied to metal chains.

The last part consists of "a system of fastening leather, silk, "mohair, and other chains" by the use of slides :—A piece of metal "is previously passed through one part of the chain" and is then "passed obliquely through the hole of the slide, "when it takes an upright position and thus allows one part "of the chain to run through the slide."

[Printed, 8*d.* Drawing.]

1863.

A.D. 1863, January 2.—No 14.

EYLAND, CHARLES.—(*Provisional protection only.*)—"Im-"provements in the manufacture of buckles," used for "vest

" backs and other similar purposes." The rim and centre bar are made by stamping or forming them from one piece of metal. The chape and point piece are made from separate pieces of metal. The chape and point piece are bent round the bar, "thus making the buckle a double-acting one, with " the chape capable of being turned either way."

[Printed, 4*d*. No Drawings.]

A.D. 1863, January 7.—No. 60.

HUDDART, George Augustus.—"Improvements in but- " tons." These buttons, "pearl and other buttons," are so constructed that they can be fastened to fabrics without "the " tedious operation of sewing."

First method :—The button head is made with a shoulder or projection on the under side, and the shoulder is tapped to receive a binding screw which forms the shank. The button is fastened to the fabric by passing the screw through and " screwing it up tightly into its socket." Or a screw or tapped shank projects from a shoulder on the under side of the head; the screw is passed through the fabric, and a screw cap nips the fabric between it and the shoulder. In covered buttons the screw shank is secured to and forms part of the back shell.

Second method :—A hole is pierced through the button head and shoulder for the passage of a screw; a clamping nut or screw cap is applied to the end of the screw after passing through the head, shoulder, and fabric. In "a cloth or wash- " ing," button, a screw with a broad head passes up through the fabric into the button shell which is tapped to receive it.

Third method :—The button head and shoulder are perforated; a tubular shank is passed through the hole and the fabric, and the ends of the shank are expanded by pressure like "ordinary eyelet-hole tubes." Or the shoulder "is " countersunk to receive the tubular shank," which after being passed through the fabric "is compressed endwise."

[Printed, 8*d*. Drawing.]

A.D. 1863, January 17.—No. 150.

EDWARDS, John.—"Improvements in the manufacture of " buttons." The first part of this invention relates "to the " making of shank buttons ;" the shank is so arranged that it will "retire when pressed into the body of the button and "cannot be broken off in packing." A metal shank, loop-shaped, with the upper portions brought together and the ends turned back, is put into a "suitably formed mould of wood or "any other suitable material;" the shape of the shank and of the mould is shown in the annexed sheet of drawings; the mould "is then closed into a metal shell." Sometimes the bottom of the mould is covered with metal.

Or the body of the button is formed of an ordinary top and bottom metal shell; the bottom shell is pierced with either one or two holes; a loop-shaped shank is passed through the hole or holes; its ends are turned back; and a spring is put round the portion which is inside the shell, causing the button "to sit close to the garment when the button is not in "use."

The second part relates to "belt buttons:"—A hook is attached to the button; it is "passed through the cloth and "sewn to it;" the belt "comes between the back of the "button and the hook" and is thus prevented "from pressing "the button on one side."

[Printed, 6*d*. Drawing.]

A.D. 1863, January 17.—No. 156.

NEWTON, WILLIAM EDWARD. — (*A communication from Pierre Labat.*)—"Improvements in the manufacture of buttons." The improvements relate to metal buttons and more particularly "to those which are of a spherical form;" they consist in producing a button in one piece without soldering and without heating the metal.

The metal is cut out or stamped into a blank "of suitable "thickness and form and with tails or elongated ends." The matrix first used is mounted in an iron bed; it is provided with a recess for the reception of the blank. A punch with a rounded or hemispherical end descends, forces the blank down into the recess and turns up its edges and tails. In the second matrix there is a slot into which the tails "come together and "form an incipient shank," when the blank is put into the matrix "with the tails downwards" and is subjected to the action of a punch "with a concave end to fit the blank." The slot serves also as a guide to a rod which pushes out the partially formed button. The rod is jointed to a ball set in a lever and retained in position by a plate screwed to the lever, "thus "forming a universal joint." By the second operation the blank assumes "a pear shape," and a third matrix and a third punch also having a concave end make the article more spherical and complete the shank "all but trimming and piercing." These finishing operations are carried on "in a fourth appa-"ratus consisting of a press and die," or "by any suitable "means."

[Printed, 8*d*. Drawing.]

A.D. 1863, January 21.—No. 184.

BOUBÉE, Adolphe.—"Improvements in apparatus for cast-"ing or moulding articles in glass and in imitation of precious "stones or marbles." The first part of this invention relates to the manufacture of glass globes for lamps, &c.; the second to the manufacture of buttons, studs, and other articles "made "in imitation of agates or other precious stones or marbles;" the third and last to the apparatus employed.

The composition for making buttons and studs consists of stones reduced to powder and mixed with "a certain propor-"tion of salt of potash and saltpetre." The mixture is passed through a sieve, then put into a crucible and heated in an ordinary glass furnace for about nine hours. "The material "is then taken out of the crucible in a compact mass and is "ready to be used in the same manner as glass." For making an imitation of malachite, the composition is heated a second time, and some grains of real malachite in a pounded state are thrown into the crucible.

The apparatus consists either of "an instrument in the form "of a vice or pincers, with suitably formed dies inserted in "the jaws thereof, in which the molten composition is inserted "and pressed;" or of a hinged mould having the interior "formed to suit the required shape of the articles."

[Printed, 8*d*. Drawing.]

A.D. 1863, February 5.—No. 329.

PATERSON, John.—(*Provisional protection only.*)—"Im-"provements in buckle and hook fastenings." This invention consists of "two parts which may be used together or sepa-

"rately." The first part "is in the form of a buckle," and the improvement consists in making it "all in one piece." The prongs are formed "by slotting out parts from the buckle "plate and by leaving parts projecting beyond portions re-"moved from between these projections." A bar is left below and at a slight distance from the prongs; and below the bar "a piece is slotted out to allow passage to the material to "which the fastening is to be applied." The upper part of the plate above the bar "is bent slightly backward."

The hook fastening, "which may be formed in the buckle "flap" or be used separately, "consists of the flap (or end of "a plate) turned over, and with the point made to project and "bend slightly downward." A tongue stamped or cut out of the flap or plate "is then shaped and brought over the point "and end of the turned-up hook, whereby a safety spring "hook is produced."

[Printed, 4*d*. No Drawings.]

A.D. 1863, February 17.—No. 434.

LANE, JAMES WAKEMAN.—(*Provisional protection only.*)—"Improvements in fastenings for studs, sleeve fasteners, "solitaires, bracelets, brooches, and other uses." One part of this fastening is "a projecting piece or shank." The other part is a box having an orifice for the introduction of the shank and containing on each side of the orifice a spring catch or catches "bent or formed with a bridge." The catches are "secured to the box by screws or studs situate in cuts or "openings;" they are acted upon by springs. The outer ends of the catches project through openings beyond the box. The shank is pressed into the orifice and is fastened by the action of the catches; to release it the projecting ends of the catches must be pressed.

[Printed, 4*d*. No Drawings.]

A.D. 1863, February 18.—No. 438.

STRAWSON, EDWARD.—"Improvements in the manufacture "of buttons which may be instantaneously attached without "sewing." 1. Improvement in buttons "most suitable for "trousers:"—The button is made "in the shell form;" it is pierced with a hole near the edge and with a larger hole in the middle of the back. One end of "a curvilinear pin" is passed through the hole in the face, through the hole in the back, and through the fabric; it is then "forced into the inside of the " button, which can be turned round on it and so made perfectly secure."

2. Improvement in buttons "for general use:"—The back of the button is raised, and in the raised part a hole is made with the edge "turned inwards." The fastener is "a staple " with harpoon points;" the points are pushed through the fabric into the hole, "which compresses them till they have " passed the inverted edge," when they "expand and hook " over it." Or the fastener may be a pin or bent wire terminating at each end in a hook or a harpoon point. These buttons will revolve.

3. "A mode of attaching buttons with a ring or loop of " leather or metal:"—Two holes are made in the fabric; the ring or loop "is doubled together;" both ends are passed through the fabric into holes in the back of the button; and a flat pin with a shoulder at each end is "inserted into the " doubled ends." These buttons will revolve if they are pierced with only one hole.

[Printed, 8*d*. Drawing.]

A.D. 1863, February 20.—No. 461.

MARSDEN, WILLIAM.—"Improvements in buttons and other " similar fastenings, and in the modes of attaching or securing " the same." This invention consists of a "circular or con- " figurated disc and fangs attached to or separate from buttons " of every description, and the application of the same to all " the holed as well as the linen, cotton, and other like buttons " of commerce," and likewise of the method of attaching such buttons to garments without any sewing.

The fastening portion consists of a disc with pointed fangs projecting at right angles "radially from a centre boss or " otherwise;" this portion may be fixed to the button or be separate therefrom. In the latter case it is fastened to garments by passing the fangs through holes made in the button, then through the fabric, then (if extra strength is required) through a disc of metal or leather, and finally turnthem down side by side, or so as to lap over each other.

Sometimes the process is reversed, and the fangs "are turned "down across the button itself."

Buttons with only one hole have the hole "countersunk "from the face," and the fastener is tubular or flanged, or a "split tang," one portion corresponding with the countersinking, the other capable of being opened and pressed down after passing through the fabric.

Some "fastening media" are simply strips of metal pointed at both ends and "turned up to the proper form;" these are passed through holes in the buttons, then through the fabric, and are then turned down.

[Printed, 6*d*. Drawing.]

A.D. 1863, February 25.—No. 526.

EDWARDS, John.—(*Provisional protection not allowed.*) —"Improvements in the manufacture of buttons." The improvement consists in fixing the colour of gilt buttons by the application of "silver varnish or any other suitable varnish "or liquid;" the varnish is applied in "the same way as "lacquer."

[Printed, 4*d*. No Drawings.]

A.D. 1863, February 26.—No. 544.

CLARK, William.—(*A communication from Achille Auguste Feldtrappe, and René Dutfoy.*) —(*Provisional protection only.*)—"Improvements in the manufacture of buttons and in "apparatus for the same." These buttons are made of "any "ceramic plastic material" and "without any projecting "shank;" they are pierced laterally, and on each side of the passage there is "a cut or bevelled part" for the easier passage of the needle. The lateral passage may be lined with a "tube either ceramic or metallic."

The apparatus consists principally of (1) upper tools having the external form of the button to be produced; (2) lower tools carrying guide slides "which form the channels through the "body;" (3) "transverse pins forming a rake or comb which "rests on the slides;" these "produce the hole or tunnel which "constitutes the fastening shank." The connecting parts and the action of the machine are described in the Provisional Specification.

Buttons with a shank may be made in the machine by leaving in the lower tools a space, which the shank "is afterwards to "occupy."

[Printed, 6*d*. Drawing.]

A.D. 1863, March 3.—No. 591.

JONES, Richard Henry, and ABRAHALL, John.—(*Provisional protection only.*)—"Improvements in bracelets and "brooches." These articles are so constructed that the part carrying the stone or principal ornament may be reversed without removing the article from the arm or dress. In connecting the locket or frame carrying the ornament to the article the ends of the axis of the frame engage in holes formed "in "two bars capable of sliding in tubes outside" the ring in which the reversible frame turns. These tubes "are at right "angles to the plane" of the locket or frame. By this arrangement the locket or frame "is capable of being raised "above the ring" and "may be reversed or swivelled" without removing the article. After reversing, the bars "are "pushed into their tubes," when the locket or frame "is "depressed upon" the article. The bars may be provided with spring catch fastenings. Instead of bars, "an inner ring "sliding within the fixed ring" may be employed, capable of "rising and falling in the fixed ring." The axis of the locket or frame "turns in the sliding ring."

[Printed, 4*d*. No Drawings.]

A.D. 1863, March 6.—No. 633.

JOURDIN, Michel.—(*Provisional protection only.*)—"Im"provements in machinery for engraving by means of elec"tricity," applicable to watch cases, jewellery, and other articles. The pattern to be reproduced is engraved by hand or other means "at least four times larger than the engraved "plate required." This pattern plate "is filled up with an "insulating material" and is adjusted on a frame connected with the machine. In front of this plate "is placed a small "metallic point made slightly to press upon it and in com"munication with one of the poles of an electric battery." On another frame is adjusted the object to be engraved, and in front of this "is placed a small graver pressing on the article

" to be engraved or being pulled from it through the medium " of an electro-magnet." Both frames are always turning during the operation, but the metallic point and the graver are "susceptible of moving in a longitudinal direction;" they do not however advance with the same speed, their speed depending on the relation between the size of the pattern plate and the object to be engraved. This motion is obtained by the use of "two wheels placed the one with the slide supporting the point in front of the pattern, the other with the " slide supporting the reproducing graver."

[Printed, 4*d*. No Drawings.]

A.D. 1863, March 17.—No. 710.

BRIERLEY, John Henry, and GREENWOOD, Barzillai. —(*Provisional protection not allowed.*)—An "All England " Cricketer's clasp." A photographic group of any number of "Eleven of All England Cricketers" or of "United All " England Cricketers," reduced to be of suitable size and rendered impervious to damp by means of "special chemical " solutions," is inserted into the metal clasps by means of metal frames.

[Printed, 4*d*. No Drawings.]

A.D. 1863, March 17.—No. 712.

ATKINSON, William Henry.—"Improvements in studs or " fastenings adapted to holding together parts of shirt fronts, " wristbands, collars, gloves, and other articles of wearing " apparel." These studs are "adaptable to eyelet-holes " instead of to the ordinary button-holes," and they can be " fastened to the garment without any derangement or creasing " being caused thereto."

These studs "are made on two principles," one of which is that their discs are separable from each other; the hollow stem of the one is inserted through the eyelet hole, and the stem of the other is passed into the hollow stem and secured therein by one of "a variety of contrivances," such as "spring " catches, screws, pins, slotted pins and keys, spring snaps " or wedge-shaped pins, or pins with angular heads shutting " into a spring plate which closes into a groove above the " wedge." Spiral and india-rubber springs are equally applicable.

The other principle consists in "forming the stud with one "disc only, and inserting the holders, wires, bars, or fastenings at the back thereof through the eyelet-holes." At the back of the stud are two wires or bars, one fixed, the other moveable on a centre and capable of being turned round by the head of the stud; "being placed in a line, they are in-"serted through the eyelet-holes," and the moveable one being turned, "a long and straight or curved bar is formed, "which holds the stud securely in position." This method of fastening admits of many modifications (some of which are described in the Specification), "although strictly in con-"formity with the object to be attained."

[Printed, 6*d*. Drawing.]

A.D. 1863, March 18.—No. 720.

WILD, William Charles, and RANDEL, James Henry.—"A new and improved mode of inlaying gold and other metals in glass, and in a composition suitable for the manufacture of "jewellery and other ornaments, buttons, and other similar "articles." Gold or other metal is inlaid in glass by placing it within a mould, "which is then placed at one end of a pair of pinching pliers." The mould is filled with melted glass and compressed by the pliers. The metal "remains imbedded "within the glass, which is then annealed and is afterwards "ready for cutting and polishing." The glass preferred is Bohemian glass.

The composition is made of four parts of glass and two of enamel well pounded and mixed in a mortar; it is put into a copper mould, the metal to be inlaid being placed at the bottom of the mould. The mould is laid on a copper plate (on which a thin layer of plaster of Paris is spread), and the whole is put into an enamelling stove over a coke fire. When the composition is well fused, it is annealed, and when taken out of the mould it is ready for cutting and polishing.

[Printed, 4*d*. No Drawings.]

A.D. 1863, March 20.—No. 743.

COUCHMAN, Richard.—(*Provisional protection only.*)—"Improvements in articles or means for supporting or carry-

" ing ladies' parasols, bags, or other articles or appendages." This article is made of wire or stamped metal bent into the form of a hook for attachment to the waistband or other convenient part of the dress. From the front arms project " capable of springing together in order to hold and support " the handle or other part " of the parasol, &c. The space between the arms is secured by a chain, ring, or other contrivance.

[Printed, 4*d*. No Drawings.]

A.D. 1863, April 7.—No. 877.

JOHNSON, JOHN HENRY.—(*A communication from Victor Emanuel Tamisier.*)—(*Provisional protection only.*)—" Im" provements in polishing precious and other hard stones, " and in the machinery or apparatus employed therein." The polishing is effected " without the intervention of polishing " powders or substances of any kind."

The polishing wheel is " of fine grit stone," and the dust produced is removed " by a ventilator or brush slightly wetted " being occasionally applied to the wheel ;" it is mounted on a vertical spindle and is driven at the rate of about 100 revolutions per minute ; it is actuated by a strap and driving pulley, and " the spindle, which is steeled at the foot, works " in a steel footstep bearing." A casing surrounds the wheel " projecting slightly above its surface," and under the wheel there is a hopper " which directs the water from its surface " into a reservoir below." The wheel can be instantly stopped by means of a clutch.

The material to be polished is contained in a square holder, wherein it can rise or fall so as to " accommodate itself to any " undulations in the surface of the wheel." The holder " is " fitted to a radial bar, which is secured to the edge of the " surrounding casing."

" In polishing pieces of jasper rock of the dimensions of " about 4 inches in length by 2½ inches in width and 1½ in " thickness, no pressure is required beyond that of the weight of the piece, but " for smaller sizes a slight pressure should " be applied."

[Printed, 4*d*. No Drawings.]

A.D. 1863, April 24.—No. 1026.

HINKS, James, and NEWMAN, James.—(*Provisional protection only.*) — "Improvements in the manufacture of "buttons." Four-hole or brace buttons and "other metallic "buttons which require to have a white or silver-like appear-"ance" are improved by cutting out the blanks from tinned plates of iron which have been "planished by rolls, or by the "process called wheeling," and afterwards polished and burnished. The burnishing may be deferred until the parts of the button have been put together.

Sewn-through buttons are improved by making "the trough-"like ring or shell with a rim or elevation on the convex side." The rim is "on the extreme edge" and forms on the convex side a recess in which can be placed a disc perforated with holes for the passage of the needle. Or a piece of wire "bent "so as to make a series of cross-like arms" may be placed in the recess.

[Printed, 4*d*. No Drawings.]

A.D. 1863, May 7.—No. 1142.

STANLEY, Alfred. — (*Provisional protection only.*)— "Improvements in the mode of finishing clasps or other such "like metallic connectors, and which said mode of finish is "also applicable for other purposes." The clasps are covered with leather on one or both sides. The leather is "moulded, "pressed, or embossed to the shape or sectional design of the "metal shell," and is secured by sewing or otherwise "to the "metal portion or part or back covering." A central or other ornament is fastened on the outer surface of the leather by means of a wire shank soldered to the ornament and passing through the leather, shell, &c.

[Printed, 4*d*. No Drawings.]

A.D. 1863, May 15.—No. 1224.

MACMILLAN, Alexander.—"Improvements in buttons and "in fastening buttons to garments." The button (of whatever material) is made with a shank by preference "of a "cylindrical shape;" at the back end of the shank "is formed "an enlargement of somewhat greater diameter" than the shank, but "such as will pass through a comparative small "hole" in the fabric to which the button is to be attached. To prevent the shank from being drawn back through the hole a disc of suitable material is employed; a small hole is made through the disc; the enlarged end of the shank is forced through the hole, "and the disc by its elasticity em-"braces" the shank.

Sometimes the back end of the shank is "split or made "double or fork-like," so that after passing through the hole it "will readily be fastened to a disc" having a hole in its middle; this hole "is formed with a bar across it," and the fastening is effected "by the split or open part of the stem "passing on either side of the bar and then being pressed or "shut down thereon so as to embrace the cross bar."

In place of the double or split shank being on the back of the button, it may be on the disc, and the button is then made "with a bar across a hole or opening at the back."

[Printed, 4*d*. No Drawings.]

A.D. 1863, June 11.—No. 1452.

KAIN, JOHN FRANCIS.—(*Provisional protection only.*)—"Im-"provements in umbrellas, parasols, sunshades, walking "sticks, and whips, and in brooches and other ornaments." In brooches and other ornaments for personal wear, the inventor makes a recess closed at one end and covered at the other with a perforated cap. In the recess he places "a per-"fumed or perfuming agent in a pasty, solid, or semi-solid "state."

[Printed, 4*d*. No Drawings.]

A.D. 1863, June 20.—No. 1554.

GOLL, ALEXANDER THEODOR NICHOLAUS. — (*Provisional protection only.*)—"Improvements in the manufacture of "mountings or settings for precious or other stones." In the production of what is known in the jewellery trade as "thread "and grain mountings or settings," the inventor substitutes mechanical means for hand labour. He stamps out metal thread and grain mountings or settings in suitable dies, "leaving grains "or projections around the openings, which grains are after-"wards employed for retaining the stones when set therein."

Sometimes the openings are formed by the dies; sometimes they are made "after shaping them in the dies." The dies are suitably formed "for imparting a grained threaded ornamental "character to the settings produced therein." The settings are afterwards finished by hand.

[Printed, 4*d*. No Drawings.]

A.D. 1863, June 25.—No. 1606.

WATSON, Alfred.—"An improved fastening." The patentee does not mention any application of this invention, but, as it may manifestly be used as a fastening for a belt or like article, it is admitted into the present series.

The fastening consists of two separate parts, one a case formed with a shoulder and "fitted at the lower part with a "spring," the other a plate carrying a catch or hasp. The catch "fits into and fastens inside" the shoulder (or a stud fixed into the upper part of the front of the case), and the spring pressing against the catch keeps the fastening closed. To open the fastening the catch is depressed by pressing on the plate.

[Printed, 8*d*. Drawing.]

A.D. 1863, June 30.—No. 1631.

COLE, Samuel.—"Improvements in clasps or fastenings for "securing brooches, solitaires, and other dress ornaments." The patentee describes his invention as applied (1) to a "link "known as the solitaire," (2) to a brooch.

1. A bar or pin is hinged to a metal plate secured to the back of the solitaire or to the back itself of the solitaire; it is "pro- "vided at the hinge with a small flirt-up spring tending to "throw up the bar;" and at the other end it is curved or hooked. At the opposite end of the plate or back there is a spring snap. The curved or hooked point on being pressed down "is caught in a small hole or beneath a catch" in the snap. To release the point pressure is applied to the beak of the snap "forcing it inwards," and the bar "is thrown up by "the flirt-up spring."

Or the end of the bar is left straight, "the action of the snap "being reversed, that is to say, in unfastening the snap must "be drawn back."

Or a "flat curved spring" is secured to "the inside of the " back plate;" the point of the bar passes "through the back " plate" and engages in a catch formed on the spring or in the spring itself; in either arrangement the bar is released by pressing inwards upon a projection on "the edge of the " mount."

2. The fastening first described is used, and a stop "is " placed at the back of the hinge" to prevent its opening to a greater extent than just sufficient "to allow the pin to be " released by the hand."

[Printed, 10*d*. Drawings.]

A.D. 1863, July 9.—No. 1716.

TENT, William.—(*Provisional protection only.*)—"Im" provements in pins or hooks for suspending fabrics, dresses, " or parts of dresses, curtains, and other articles of upholstery " or apparel." This invention consists in combining a hook with a safety pin, so that two fabrics or parts of a fabric, &c., may be attached "without any sewing," and be readily detached. The hook "is adapted to or made to form part of a " safety pin made of strong wire." For the purpose of suspension, the pin is connected to the fixed fabric, and the suspended one is hung on the hook.

[Printed, 4*d*. No Drawings.]

A.D. 1863, July 11.—No. 1735.

DIXON, Adam and PUMPHREY, Josiah.—(*Provisional protection only.*)—"A new fastener or holder for flowers or " other decorations to coats and articles of dress." Pieces (one or more) of metal or other flexible material are shaped into a tubular or hollow form. Projecting ears stand "behind " or in an opposite direction to the slit or line of junction in " the tube;" these on being pressed together cause the slit to open. The edge of the coat and the flower or other decoration are held together in the fastener "by the natural spring" ing together of the junction line" on the ears being released from pressure.

[Printed, 4*d*. No Drawings.]

A.D. 1863, July 16.—No. 1788.

MONTLEART, Agatha, and TENT, William.—" An im-" proved mode of attaching hooks to furniture or fabrics for " suspending dresses or parts of dresses, fabrics, curtains, " and other articles of upholstery or apparel." The fastening consists of "a metal hook or eye combined with a brooch " fastening and spring pin ;" it is made of wire in the following manner :—The wire is bent to form a hook ; it is then "curled " over vertically and back to a horizontal direction to form a " rest or catch ;" it is then "carried down to a suitable " distance thereby forming a stem ;" it is then curled round " to ensure elasticity" for the pin, which consists of a continuation of the wire up to the catch ; the extremity is pointed. The fastening may be used "with either end uppermost accor-" ding to the use to which for the time it may be applied."

This invention admits of "many modifications of construc-" tion :"—It may be made in two parts ; the stem of the hook or of the pin may have "a spread or flat" portion hollowed and turned up at the edges to receive the stem of the other. The stem of the hook may be soldered to the stem of the pin. The hook may be fastened "at right angles to the spring pin," which is then "to be inserted transversely" into the fabric. The stem of the pin may be made with a ring or an eye or may have a ring or an eye fixed to it.

Another fastening is made by bending a piece of wire into two hooks, one "being curved upwards and the other down-" wards."

[Printed, 6*d*. Drawing.]

A.D. 1863, August 13.—No. 2001.

ASHWIN, Thomas.—(*Provisional protection only.*)—" A new " or improved dress fastening, which said fastening may also " be applied to the fastening of braces, belts, and other bands, " and to other like purposes." One part of this fastening is " an elongated tapering loop" provided with ears or openings for sewing it to the dress. The other part is "a circular or " nearly circular body terminating in a shank or nearly flat " piece" provided also with ears or openings. The shank at or near its junction with the body "is raised out of the plane

" of the said shank into a nearly semicircular or arched form
" underneath."

To connect the parts on a dress " the loop or eye is turned
" aside or at right angles to the plane of the hook part so as to
" present the open portion of the loop to the edge of the body
" of the said hook part."

In applying the invention to braces the hook part is connected " to the band of the brace by a loop or by a buckle at
" its end;" the ends of the brace are secured " to a loop at
" the end of the eye part."

In belts, garters, &c., the two parts are connected to the ends " by loops or buckles."

The fastening may be made of sheet metal, wire, or other rigid material.

[Printed, *4d.* No Drawings.]

A.D. 1863, September 8.—No. 2204.

CUTLER, Joseph Horatio. — " A new or improved dress
" fastening, which said fastening is also applicable to the
" fastening of bands and belts, and to other like purposes."
This fastening is made of wire, and is intended to be used in the place of the ordinary hook and eye. The one part, which may be called the hook, is a piece of wire " bent into a nearly
" circular form " at its middle ; the portions proceeding from this are "parallel and close together," and the ends are bent into loops. The other part or eye is bent into a semicircle at its middle, "the said semicircular part passing into a nearly
" elliptical part," whose longer diameter is at right angles to the semicircle ; the stem and loops of the eye are similar to those of the hook. "The extremity of both the hook and eye
" is slightly inclined to the other part," so that " the fastening
" is very nearly flat," when the two parts are connected by passing the circular portion of the hook through the elliptical portion of the eye, and "bringing the two parts into the same
" plane."

[Printed, *6d.* Drawing.]

A.D. 1863, September 18.—No. 2300.

HUSKINSON, Henry Charles. — "Improvements in the
" manufacture of buttons." The first part of this invention
" relates more particularly to the class of buttons described in

" the Specification of a Patent granted to Edwin Green and " James Newman, dated February 13th, 1862, No. 392, and " consists in giving improved forms to the eyelets" or openings for passing the needle through. The eyelets used by the patentee "may be oval or oblong, square, diamond, angular, " triangular, or other outline differing from a circle," and the bars or parts of the button forming the bars are by preference of such shape as to produce needle holes "of circular or other " suitable outline whereby the thread is prevented from " slipping or moving to-and-fro."

The button is made by attaching the fabric to the front shell by the oval eyelet "formed in this arrangement out of the " front shell;" a bar, semi-eyelet, ring-hole, or cross piece to form needle holes is produced out of the back shell. But by preference the eyelet is formed separately and inserted through a hole in the front shell, "the front covering fabric being " placed between them," and the edges of the eyelet "being " afterwards turned over or closed on the inside of the shell." Or the front and back shells may have each an oval eyelet attached thereto, and a piece of fabric inserted between will serve as a means of attaching the button to a garment. The fabric at the back of the button is made "to project slightly " from the surface" to which it is applied.

The patentee describes the method which he prefers to adopt in making eyelets.

The second part consists in employing for the manufacture of covered or partially covered buttons certain fabrics, "such as " were fully described in the Specification of a Patent " granted to William Tongue dated December 31st, 1861, " No. 3260, manufactured from various kinds of fibrous " materials.'

[Printed, 6*d*. Drawing.]

A.D. 1863, September 19.—No. 2309.

COUCHMAN, Richard.—"Improvements in articles or in" struments for supporting, holding, or carrying parasols, " bags, watches, ornaments, or other articles or appendages." This instrument is composed of two parts, one for passing over a band or belt, the other for holding the parasol or other appendage. The first part (made of wire or stamped metal) is

" a spring clip, or loop," which when passed over or round the band is secured thereto " by closing the open ends together, " one end passing over into a hook or loop formed on the " other end." The second part (also of wire or stamped metal) is a clip ending in two bowed legs for the reception of the parasol, &c. and carrying a sliding ring which closes the bows. The parts are united by means of a ring or eye formed on the stem of the first part and a ring or eye formed in the top of the second part; there may be a connecting link if required.

Each part is susceptible of modifications :—One end of the first part may be pointed to pass through the dress and fasten like a brooch pin. Or the first part may resemble a shawl pin. Or it may be like the second part, the bow embracing the band and closed by a sliding ring. The second part may be hook-shaped and closed by a loop, chain, or other contrivance; or it may be a spring swivel; or it may consist of a ring (attached to the eye of the first part), a chain, and a cross bar.

[Printed, 8*d*. Drawing.]

A.D. 1863, September 26.—No. 2368.

ROWLETT, William Tertius. — (*Provisional protection only.*) — "Improvements in crinolines and hooped skirts." The object of this invention is "to provide a cheap, simple, " and easy means" of contracting or distending a hooped skirt while being worn.

A cord (one or more) is passed through guides formed on the upper or under side of the skirt. By pulling the cord or cords, the skirt "will be disposed around the person of the " wearer in a fold or folds," and may be secured in a "con- " tracted form" by passing the cord or cords round a button or other fastening placed in front of the dress.

[Printed, 4*d*. No Drawings.]

A.D. 1863, October 24.—No. 2631.

HANNART, Louis Joseph.—"An improved clasp or fasten- " ing for gloves or other wearing apparel, for umbrellas, tra- " velling bags, or other similar objects." This clasp may be sewn, riveted, or otherwise fastened to " gloves, gowns, gaiters, " stays, or other wearing apparel." It is composed of two parts, one carrying "a mushroom-shaped button," the other "a hollow ball or sphere, which from the outside resembles a "small bell." The ball has on the under side an opening through which the button enters and a rim which gripes the button shank. Any suitable hollow may be substituted for the ball.

[Printed, 6*d*. Drawing.]

A.D. 1863, November 5.—No. 2740.

BLACKBURN, Bewicke. — "An improved coupling or "buckle." The patentee describes his invention as a glove fastening, but "it is applicable to various other articles which "require coupling."

The coupling "consists of a lever hook, to the long arm of "which a cord or strap is fixed." The short arm is passed through a loop fastened to one side of the glove and is bent round "to prevent its becoming detached from the loop." The strap is passed through a hole in the other side of the glove; it is secured to the long arm (by preference) "by passing it "through two holes made at a short distance from the end "thereof;" it carries a button at its outer end.

To secure the two parts of the glove "draw the strap to the "left," and the hook will engage in the hole of the glove; by drawing the strap to the right the hook will be disengaged, and the parts separated.

[Printed, 6*d*. Drawing.]

A.D. 1863, November 12.—No. 2824.

BETTLE, Philip.—(*Provisional protection not allowed.*)— "Improvements in pins, brooches, buckles, and other orna-"ments, to be applied to various articles of wearing apparel." This invention relates to a fastening which consists of "a swivel "pin combined with a split or divided spring ring."

The ring may be of any convenient shape, "but it must be "split or divided at its lower part so as to allow the stem of "the pin to be passed through it from back to front or vice "versâ." In order to secure the ornament to any article the pin is passed through the fabric "from front to back and through "again;" that part of the stem which is brought to the front "is then passed through the divided part of the ring and "is brought in front thereof and will be retained there by the "elasticity of the ring which will keep the divided part closed." To detach the ornament the stem is to be passed back through the divided part.

[Printed, 4*d*. No Drawings.]

A.D. 1863, December 7.—No. 3067.

ANTILL, Alfred and **WILKINSON, William.**—"An improved mode of manufacturing joints and catches for brooches "and other articles of jewellery." In making joints for brooches of wood, jet, rubber, papier maché, or other like description, "where the joint is required to be inlaid in the "brooch," the patentees make the joint solid, either by casting the whole of each joint in one piece and planishing it by means of a die, or by drawing metal to the thickness and pattern of the joint required and then cutting out from the front "a "sufficient portion of the metal to allow space for the tongue "joint," and from the back so much "as will leave the remainder to form either a plate or pegs."

In other kinds of brooches where the joint is soldered on to a metal surface, the patentees make the joint by either of the foregoing methods or by raising it from the solid metal by means of dies; this joint requires to be cut out in the front only for the admission of the tongue joint.

They cast the tongue joint in one piece and screw the tongue into it, "thus avoiding the necessity for soldering." They drill a hole through the tongue joint and "its fellow joint" and unite them by a pin which forms the axis upon which the hinge works. Sometimes they cast the tongue in the tongue joint, and having fitted the tongue joint with a suitable pin or axis, "cast this into its fellow joint," thereby avoiding "the "necessity for drilling."

The catch they make of one solid piece of metal by either of the foregoing ways suited to the description of brooch or by hand labour. If the catch is to be furnished with a plate or pegs, they cut it at the back as in the manufacture of the joints. They finish the front part of all catches "by a press "furnished with a suitably shaped cutting tool."

[Printed, 4*d*. No Drawings.]

A.D. 1863, December 8.—No 3081.

BRIERLEY, John Henry.—(*Provisional protection only.*)—"Improvements in buckles for brace and other dress fast-" enings." This buckle is cut out of a plate of metal; "the " shape or configuration" is shewn in the annexed drawing. In the upper portion a horizontal slot is cut, and therein is fixed "the ordinary lever portion of a lever buckle." In the lower portion a slot is cut somewhat in the shape of a horse shoe with its ends turning upwards; a part of the inner portion of the shoe is "raised so as to form a hook." A loop or catch " works upon the hook," and the hook and its adjoining parts act as a spring to secure the loop, "the metal having been " tempered with that intention."

[Printed, 6*d*. Drawing.]

A.D. 1863, December 9.—No. 3106.

PERKS, Thomas. — (*Provisional protection only.*)—"Im-" provements in fastenings for brooches and other articles of " jewellery." The object of this invention is to protect the pin-point of a brooch, or other article of jewellery which is fastened by means of a pin, and effectually secure it in the catch in which it engages.

The catch is made in the shape (by preference) of "a hollow " sphere" having on one side "a horizontal slot opening into " a vertical slot on the side opposite to the joint on which the " pin turns." The point is passed through the horizontal into the vertical slot.

To prevent the pin from being accidentally disengaged, a spring "of a nearly elliptical figure" has its lower end "fixed " to the bottom of the horizontal slot" and its free end bearing " against the upper side" thereof. The pin-point is pressed upon the free end (which yields), and the point escaping from it passes into the horizontal, and thence into the vertical slot. If the point by chance passes out of the slots, "it enters the " bow of the spring." To release the pin "the free end of " the spring is pressed from the top of the horizontal slot."

[Printed, 4*d*. No Drawings.]

A.D. 1863, December 14.—No. 3157.

EDWARDS, SAMUEL. — (*Provisional protection only.*) — "Improvements in grinding pearl, and which said improvements are also applicable for grinding other materials," namely, "for grinding or reducing tortoise-shells, precious and "artificial stones, and other like materials."

The improvements consist "in the arranging of a lever or "levers, simple or compound, and with a back traversing and "universal adjustable fulcrum," so that the operator can readily place the pearl, &c. to be ground "underneath a suitable pad placed for convenience in contact with the periphery "of the stone," when by a slight pressure on the end of the lever, "the stone being in motion, the work rapidly proceeds."

The inventor prefers the use of a compound lever, because it enables him "to place the lever high and above the screen "necessarily required in front of the stone, to protect the "operator from the flushing of the water that is required to "run over the surface of the stone during the process of "grinding."

He applies lever pressure "to the surface of grindstones set "up to run on vertical spindles," so that "two operators can "work at the same stone, the fulcrum of the levers being provided with a traversing and universal action as in the former "case." The stone revolves in a vessel, "so arranged as to "prevent the water that is permitted to drop on the surface of "the stone flying off horizontally from its refluent motion, and "at the same time to collect the water at the bottom."

His invention enables him "to apply to the grinding of "pearl, a flat surface, which is desirable for many purposes."

[Printed, 4*d*. No Drawings.]

A.D. 1863, December 21.—No. 3224.

GREEN, EDWIN JOHN, and MASON, RICHARD.—"A holder "or suspender for holding cotton and other reels, spools, or "balls, parts of which are also applicable for other useful "purposes." By means of additions to the "nursery and point "protected pins" patented by "Charles Rowley on the 12th "of October 1849, No. 12,796," the patentees construct a contrivance for attaching reels, &c., to ladies' dresses, and by further additions they make a suspender for holding up ladies' skirts.

1. In the middle of the arm which terminates in the protector they twist a portion of the wire vertically downwards and attach to the lower end thereof a horizontal bar by an eye. This portion and the bar pass through the central hole of the reel and support it, whilst the ordinary upper part of the pin attaches the whole to any convenient part of the dress.

2. The twisted portion is made at the end of the arm towards the protector and terminates "with a large eye at right angles" with the bend which forms the spring of the pin. The pin portion "secures the suspender to the under garment," and the skirt is held up between the eye and the spring and is retained by aid of a loop which moves up and down on the twisted portion and the pin-shank next to it.

[Printed, 8*d*. Drawing.]

A.D. 1863, December 24.—No. 3269.

DAVENPORT, Thomas William and COLE, Samuel.—(*Provisional protection only.*)—"Improvements in the manu-"facture of bracelets and other ornaments formed of paper or "papier maché or other similar material." The object of this invention is "to supersede drilling" in the blocks, beads, or numerous detached parts of which these ornamental articles are composed.

The inventors adopt for this purpose either of the following methods:—They insert into the body of the material (during the process of manufacture) a core "by preference of wire, "greased;" this, when the block or other form is completed, is drawn out.

Or they make the core of a small tube and leave it in the block.

Or they "plane a groove in one or both parts of a block or "form," and afterwards "connecting the two parts together" leave a channel therein.

[Printed, 4*d*. No Drawings.]

A.D. 1863, December 31.—No. 3303.

BBOWN, William Fulford.—(*Provisional protection only.*) —"Improved fastenings for scarfs, ribbons, neckties and other

" articles of dress, by means of a ring with a spring clasp or " chain band or pliable shank." The three modes of fastening described are :—(1) "the half or front segment of a ring" and " a straight or otherwise shaped back" jointed thereto and secured to it at the other end by a spring snap ; (2) a ring or band composed of several parts jointed or otherwise connected " so as to form a kind of flat chain ;" it is fastened in front by a spring or clasp ; (3) a ring "with a suitable front and a " pliable metal back."

[Printed, 6*d.* Drawing.]

1864.

A.D. 1864, January 2.—No. 15.

ANDOE, Francis.—(*Provisional protection only.*)—" Apparatus for securing watches and such like articles from being " stolen from the person." A metal plate is fastened to the inside of the pocket. In the plate is a groove "provided with " a slide having a hook or catch, which is fitted to slide against " a similar catch or projecting piece, the slide having a screw " or other shank attached to it, which is to be passed through " the side of the pocket and terminate on the outside surface " of the waistcoat or other garment in a button." The button being drawn back will leave an opening to allow the ring of a watch or like article to be introduced, and "upon the button " being released, the slide will close again by reason of the " action of a spring attached to the side or to the projecting " piece aforesaid, which tends to pull it towards the other projecting piece." A stop may be used "to prevent the slide " being put in motion without releasing the stop."

Printed, 4*d.* No Drawings.]

A.D. 1864, January 8.—No. 53.

LAZARUS, Isaac. —(*Provisional protection only.*)—"Improvements in fastenings for brooches and other articles of " jewellery, which said improvements are also applicable to " fastenings, for fastening articles of dress and for other like " purposes." This invention is " specially applicable to

" brooches." A tube fixed at the back of the brooch passes " from end to end thereof." A rod slides in one half of the tube; it terminates in a knob which is outside the tube. The knob carries a pin, "the pointed part of which is bent inwards " and is situated nearly parallel with the tube." Within the tube and round the rod is a coiled spring, one end bearing against a collar on the lower end of the rod, the other against the top of the tube. At the end of the tube opposite the knob is "a fixed pin, of a similar form to the elastic one, the points " of the said pins being turned towards each other."

The fixed pin is inserted into the dress; the elastic pin is then moved from the end of the brooch by drawing the rod from the tube, and "on releasing the rod, the pin connected to it enters " the dress and securely fastens the brooch thereto."

"Both pins may be made elastic," in which case one or both of them may be drawn out of the tube in fastening the brooch to the dress. "Instead of a single pin at each end of the " brooch a double pin may be used."

[Printed, 4*d*. No Drawings.]

A.D. 1864, January 22.—No. 178.

EADES, Richard Eyras.—(*Provisional protection only.*)— " Improvements in scarf and necktie rings." The ring is made in the shape of "a half loop or other desirable shape " of ivory, metal, or other suitable material." Across the diameter and at the back a piece of elastic is stretched by preference "in the form of a double or loop;" this is "threaded " through the one side, stretched across," and "hooped on a " small stud or suitable projection" such as a hook; it may have a tab at the end to take hold of.

The elastic being unlooped on the one side, the ring is placed on the scarf, and the elastic "is then passed behind the " parts" of the scarf and "looped on again."

[Printed, 4*d*. No Drawings.]

A.D. 1864, January 23.—No. 184.

BRIERLEY, John Henry.—(*Provisional protection only.*) —"Improvements in belt clasps or fasteners." The inventor stamps or embosses a metal plate and then cuts away or pierces out such portions "as may seem most desirable for the pur-

" pose intended." He cuts out another plate of such shape " as will be best fitted for laying behind the first-mentioned " plate ;" he forms out of the second plate one or more hooks. He pierces one or more holes through both plates of the same size in each and so arranged that the second or back plate will fit exactly into the other when the two "are connected " together by means of an eyelet passed through the holes."

He cuts out a piece of leather or other substance suitable for a belt ; to one end of it he attaches "a catch suitable to " connect with the one or more hooks," and in the other end he pierces one or more holes according to the number of holes cut in the plates. He places the front plate on the front side of the belt, the back plate on the back side, and passes the eyelet or eyelets through the hole or holes in the plates.

"Thus the colour of the belt shews up through the front " plate at the parts cut away, and the plate of metal appears " as though inlaid with the material of which the belt is " made."

[Printed, 4*d*. No Drawings.]

A.D. 1864, January 26.—No. 223.

HUSKINSON, Henry Charles. — " Improvements in the " manufacture of buttons." The first part of this invention relates to " covered or partially covered buttons formed with " eyelet holes," and the improvement consists in causing the outer edges of the eyelets (by preference "after they have " been attached to the fabric ") to be flattened by dies and pressure or other means, whereby " a superior finish is given " to the button. The eyelets may be of any shape.

The second part consists in forming the eyeleted openings ("of buttons having eyelets of any form ") with "bevelled or " conical surfaces," by which means "a new and improved " finish " is given to the button.

The third part relates to covered or partially covered buttons formed with two eyelet holes, and [the improvement consists in depressing by means of suitable dies and pressure the surface " between the two eyelets on the face " so as to form a groove or channel for the thread to lie within. This groove is formed after the attachment of the fabric. A similar result may be obtained "by cutting out a portion of the surface, " *thus* forming an opening between the two eyelets " and by introducing "a suitable bar below the same" in making up the button; or the fabric forming the back of the button may be used instead of a bar.

The fourth part relates to metal buttons formed with two shells, the front one having by preference an oval opening therein, the back one a round opening; the opening however in each may be varied. The improvement consists in introducing between the shells "a disc, bar, or stamped ring-hole " formed with eyeleted or raised ring-holes, or holes formed " with projecting rounded edges to produce a ring-holed bar " to the button so formed."

The fifth part consists "in forming metal buttons with ring-" holed needle holes" in combination with a front shell having therein an opening or openings of any shape. The back shell has two or more rings stamped upon its outer surface, "the holes with such rings being afterwards pierced " out by suitable tools." A disc with corresponding rings and holes forms "the inner part of the back shell." The two " are pressed up so as to fit accurately with their flat inner " surfaces together, the ringed projections being outwards;" thus prepared they are placed in suitable tools with a front shell, the edge of which is turned over the back shell.

The sixth part consists in manufacturing covered or partially covered buttons "with shells and parts to form bars or needle " holes similar to or corresponding with those described under " the fifth part." Eyelets are used in combination therewith for securing the edges of the fabric required in making up the buttons, and the patentee prefers to place a washer upon the eyelet "when it is passed through the fabric and before closing " or turning it over, by which the edge of the fabric will be " effectually secured."

The seventh and last part consists in making metal buttons " in a very simple and inexpensive manner," namely, "by " inserting a centre bit into the body of a metal disc in order " to produce suitable needle holes." The body is stamped out of sheet iron or other metal "with an opening and bar " across the centre thereof." The centre portion is cupped to receive a centre piece formed of thin stamped metal and having needles holes formed in it "by cutting and pressing " down the metal so as to leave a hollow or grooved bar " (having wings) across the opening." The rings are "caused

" to embrace the bar in the body of the button" and are then closed over it.

The patentee describes the methods which he prefers to adopt in effecting his improvements and the modifications of which some are susceptible.

[Printed, 1s. Drawing.]

A.D. 1864, January 27.—No. 233.

ATKINS, Elijah.—" Improvements in fastenings for brooches, " sleeve links, solitaires, belts, and other articles of jewellery " and dress." The first part of this invention relates to brooches and such articles of jewellery as are attached by pins; the second part to sleeve links, solitaires, belts, and similar articles.

1. A rectangular case is fixed to the back of the brooch. A plate slides in the case; its back end projects from the case, and the brooch pin is jointed to it; its front end projects also and " is made in the form of a finger plate." Inside the case is a spring of vulcanized rubber or metal, by means of which the plate "is pressed forward towards the catch" (which is carried by the under side of the case) so as to enable the pin point to be engaged in the catch. The pin point is disengaged by pressing the finger plate "towards the edge of the brooch."

2. The fastening is described as applied to a sleeve link. A case is fixed at the back of the link; the back end "is nearly " closed, the said end being pointed or tapered, or of a V- " shape"; the front end is open. The plate forming the top of the case is prolonged at the back end and carries the joint in which the pin of a hooked tongue works. In the case is a spring "consisting of a double piece of wire, the free ends of " which bear against the V-shaped end of the case," whilst the doubled end projects from the open end and is bent downwards. Across the spring "near the open end of the case" a bar is "soldered to one limb only" of the spring; the upper edge of the bar is bevelled. The hook of the tongue is notched so that the bar " may engage with the said notch." To fasten the link, pass the tongue through the holes in the sleeve, and close the hook upon the back of the link; the hook "bears " upon the transverse bar" and presses the spring into the *case until* the notch comes opposite the bar when the bar is

pressed into the notch by the spring. To unfasten the link press the outer end of the spring.

[Printed, 8*d.* Drawing.]

A.D. 1864, February 2.—No. 273.

WINKLES, James Orlando.—(*Provisional protection only.*) —"Improvements in the manufacture of fastenings for belt "clasps, bracelets, and necklets, applicable also to other "articles." It is proposed to substitute for the ordinary "projections on the back of the clasp" a metal spring, which "upon being pressed from the outside" will open and admit the hooks, then close and hold them securely therein.

To make the spring German silver or other metal is passed between rollers, and pieces of a suitable size and shape are cut out by a press. A piece is then soldered or riveted to the disc, "and it is afterwards bent up into proper form by means "of a pair of pliers or other apparatus."

[Printed, 4*d.* No Drawings.]

A.D. 1864, February 2.—No. 278.

GENGEMBRE, Philippe William.—"An improvement in "buttons and in fastenings therefor." The body of the button consists of two discs united in the ordinary manner; the upper is "concavo-convex," the lower is flat and provided with an aperture for the admission of the shank head and with a groove inside which crosses the aperture at or about a right angle. The outer end of the shank is a head, the inner end "a "triangular projection or foot;" the stem is surrounded by a spring of vulcanized india-rubber.

In order to attach the button to a garment, the foot and stem are passed through a hole in the cloth or other substance; the foot is pressed through the aperture in the disc; the disc is turned round until the foot enters the groove; and the groove and the spring "will so co-operate as not only to connect the "button body and the catch together but confine the button "to the cloth."

An equivalent for the foregoing arrangement would be "to "extend the shank with its head directly from the plate" and to make the head with a slot and recess for the reception of the shank and foot.

[Printed, 8*d.* Drawings.]

A.D. 1864, February 16.—No. 394.

ANDREWS, Hugh, and ANDREWS, John.—(*Provisional protection only.*)—"An improved mode of attaching buttons "to garments and other articles to which buttons may be "applied." The attachment is made by means of "a piece "of metal bent or doubled into the shape of the letter T, "the ends terminating at the bottom of the upright portion." The button is made without a shank and with a hole in the middle. The leg of the T is passed through the hole in the button and through a hole in the garment, and is afterwards opened and spread out in opposite directions.

This mode of attachment "is especially adapted for articles "requiring to be washed frequently."

[Printed, 4*d*. No Drawings.]

A.D. 1864, February, 22.—No. 450.

MAURICE, Samuel Solomon.—(*A communication from Simon Hayemainé.*)—(*Provisional protection only.*)—"An "improvement in the manufacture of buttons, studs, and other "fastenings for or appendages to wearing apparel." These articles "imitate in appearance linen or other textile fabric;" they are made of metal stamped or otherwise formed of the required shape and coated wholly or partly (before or after the shaping) with "enamel of white or other colour;" they are finished off in any ordinary or desirable manner.

[Printed, 4*d*. No Drawings.]

A.D. 1864, March 23.—No. 740.

COUCHMAN, George.—(*Provisional protection only.*)— "Improvements in fastenings for stocks, neck-ties, and other "parts or articles of dress." The inventor attaches to the bow or knot of the article "a retaining point or points which "may form part of a bar similar to a buckle bar," the point or points being so arranged as "to permit the neck band to "be readily drawn to the degree of tightness required." The point or points "are then caused to enter the fabric and thus "prevent the withdrawal of the part thus secured until the "point or points are withdrawn and held back by the hand."

Instead of applying the points as described, they may be attached to the part which is passed or drawn through a loop or opening.

[Printed, 4*d*. No Drawings.]

A.D. 1864, April 8.—No. 884.

FENBY, Joseph Beverley.—(*Provisional protection only.*) —"Improvements in buckles." These buckles are particularly applicable to harness, but they may be used for "all purposes " to which buckles are or may be applied."

The frame is nearly rectangular, and has three cross bars at or near its middle; the top bar "is in the same plane as the " frame;" the middle one is "underneath the former" and carries the tongue; the bottom one is "on a somewhat lower " level" than the middle one, and has the fixed portion of the strap connected to it. The point of the tongue, when the buckle is in use, bears against the top bar, and at the back of the eye of the tongue there is a projection or a spring, "which, " when the moveable strap is disengaged from the tongue, is " pressed upon by the said strap, and the tongue is thereby " made to present its point upwards so as to be ready to " engage with the strap or band whenever one of the holes is " brought over the point of the tongue."

The inventor describes "the action of the buckle" and his method of constructing "double buckles" on the same principle as single ones.

[Printed, 4*d*. No Drawings.]

A.D. 1864, April 12.—No. 922.

CHARLES, Horace.—(*Provisional protection only.*)—"Im- " provements in making buttons and other like fastenings for " apparel." The inventor makes his buttons, &c. "with a " probe in the shank." The probe "turns upon a centre" and forms a bar when it is "passed through a fabric and " turned."

[Printed, 4*d*. No Drawings.]

A.D. 1864, April 13.—No. 927.

READING, William. — "Improvements in fastenings for " attaching watches, lockets, articles of jewellery, and orna- " mental articles of dress, and other like articles to chains, " and for attaching chains to the dress, parts of which im-

" provements may also be applied to key rings and rings for " other like purposes." The patentee claims three fastenings and two modifications of the first.

The first is a piece of wire, one portion of which is bent into " a bow or hook form," with the extremity "moveable out- " wards," and forming " an elastic tongue ;" the other portion is bent into "a nearly circular figure" of greater diameter than the hook portion, and having the extremity "bent in- " wards somewhat beyond the centre." The end of the tongue "rests nearly upon the summit" of the circular part. The article to be connected to this fastening is pushed in between the end of the tongue and the part on which the tongue rests.

Modifications :—1. The ends of the wire terminate at the bottom of the fastening; the bottom portions form elastic tongues, "their inner sides pressing against each other."

2. The wire is bent into a ring-shape, one end being turned inwards, and the other or "elastic part" ending in a projection "which bears against the fixed part."

The second resembles in shape the ordinary watch swivel. The hook turns on a joint in a recess in the stem, and the pin of the joint works in a slot, allowing the hook to be placed at right angles to the stem, and "also to have motion nearly " in the direction of the axis of the stem." On the jointed part of the hook and on either side thereof and on the free end there is a projection; and in the flange of the stem are recesses of a shape proper to receive the projections. To open the hook it "is pressed upwards in the direction of the axis of " the stem ;" the slot is thereby made to move upon the " joint pin," and the projections "are withdrawn from the " recesses."

One part of the third is a ring "having a portion cut away" to permit of articles being placed on or taken off. The other part is a "hollow piece" within which the ring slides, and " forming the top of the fastening." Turning on this piece (for "about a quadrant") is a collar having at its top a small ring for attachment to a chain, &c., and inside the collar is " a slightly hooked or wedge-shaped bolt" working in a slot in the piece. On each end of the ring is a projection; when the bolt is brought to bear against one of them it "prevents " the said ring being withdrawn from the top piece ;" the other acts as a stop and prevents the ring "from being wholly "withdrawn" from the top piece.

[Printed, 10*d*. Drawing.]

A.D. 1864, April 22.—No. 1016.

BARNES, Woodruff Littleton.—(*A communication from Abel Putman, junior, and David McAlister Smith.*)—"An "improved spring hook or fastening for garments, wrappers, "blankets, and other articles." A piece of wire is doubled and bent into the shape of a hook; it is attached to a button "by one of the legs or ends." The main part or stem of the hook proper is parallel with the inner face of the button, but the ends are at right angles or nearly so with both the inner face and the main part. The ends "are slightly spread from "each other or V-shaped," and are also bent near the button "so as to form indentations or quick concaves." The other leg or end "which forms the spring part of the hook" passes into and through a slot in the back plate of the button, and is free to move therein. "The elasticity of the hook is sufficient, "or such as to keep this free end of the wire against the end "of the slot."

The hook is thrust through an eyelet hole on one side of the garment, &c.; the ends, as the hook passes through, "are "forced together until the eyelet reaches the contracted part," when the elasticity of the free end causes the concaves "to fit "snugly over the edges" of the eyelet. The hook then passes into another eyelet hole in the opposite side of the garment; if a closer connection is desired, it may be passed through until the eyelet "comes also to the concaves."

Instead of making the concaves in the ends of the wire, the ends "may be left straight, and the wire of the hook may be "spread a little so as to form shoulders;" the eyelet will pass over the shoulders and be held as securely as by the concaves. Instead of a button, one end of the wire may be coiled into a ring or head.

[Printed, 8*d*. Drawings.]

A.D. 1864, April 28.—No. 1072.

GHISLIN, Thomas Goulston.—"Improvements in the treat"ment and application of seaweed." The patentee proposes to call the article produced by his treatment of seaweed "algaeite." He applies his algaeite to the manufacture of a variety of articles, among which are mentioned hats and caps, soles for boots and shoes, cameos, buttons, and bijouterie.

He first treats "any of the common kinds of seaweed" in the manner described in the Specification of Letters Patent obtained by him on July 15th, 1862, No. 2035, and reduces them to either a powder or a paste. He incorporates the powder or paste with the following ingredients or some of them in proportions suited to the article to be made:—Gums, gum resins, resins natural or artificial, bituminous substances, paraffine, oily or fatty substances, fibrous materials, silicates of potash and soda, pulverized chalk, talc, earthy matters, metallic oxides, gelatine, farina, alum, tungstic acid, powdered charcoal, and other analogous substances. He states the particular ingredients and proportions which he prefers, according as he requires tenacity, elasticity, solidity, or durability. For the purpose of incorporating the mass he uses a masticator provided with mixing rollers or other mechanism, and he afterwards passes the mass between cylinders.

The algaeite may be hardened and rendered waterproof by steeping it in boiled oil or in any drying oil, or in a solution of gum or resin, or in any kind of varnish.

[Printed, *4d.* No Drawings.]

A.D. 1864, May 18.—No. 1251.

DEAN, Thomas.—(*Provisional protection only.*)—"Improve- " ments in buttons and in means of attaching buttons." The button is "capable of revolving round or within" its shank, which is formed with "an enlarged head on the button."

The button is attached by inserting the shank "into a plate " already fixed or ready for being fixed to the garment." The plate "is formed with one or more flaps," and when the shank is thrust into it, the flaps "are parted, then fall or spring " together, and prevent the head of the shank from passing " back again through the plate."

Sometimes the shank is connected to or forms part of a disc, " capable of revolving within the plate forming the back of " the button."

Sometimes the rim only of the button revolves; it is secured " by burring or clamping the edges on the body of the " button."

[Printed, *4d.* No Drawings.]

A.D. 1864, May 21.—No. 1281.

EDWARDS, John.—"Improvements in the manufacture of "fastenings for articles of dress and other purposes." This fastening is a hook of any suitable size, in shape "something "like the letter S" with one point projecting "beyond the "bow." This point enters the fabric, the other a suitably formed eye. The hook is detached "by drawing the point out "of the article as a pin is drawn."

Sometimes the hook is made with "one end shorter" than the other, and turned in "towards the body of the hook;" and sometimes with one end turned inwards, "thereby forming a "loop." These hooks require to be sewn on to the fabric, but need not be cut off "when the article requires washing."

[Printed, 6*d*. Drawing.]

A.D. 1864, May 21.—No. 1282.

WINKLES, James Orlando. — (*Provisional protection only.*)—"Improvements in fastenings for sleeve-links, solitaires, and other articles of jewellery." A catch is hinged on one side of a flat disc, "just as a brooch pin is hinged to a "brooch;" it is not however "constructed in a right line," but is "bent over" so that its free end falls upon the disc. The spring "which is to secure the catch in its closed position" is a piece of wire or metal secured at one of its ends upon the same side of the disc as the catch, the free end "terminating "in a loop which is hung loosely round a pin" fixed on the disc. The spring is so shaped and placed that its tendency is "to press against the catch and to take into a slot or groove" with which the catch is provided. The catch is released from its closed position by pressing the loop "either inwards or "outwards according to the position of the spring and "catch."

[Printed, 4*d*. No Drawings.]

A.D. 1864, May 25.—No. 1299.

LAW, William. — "A new or improved dress fastening, "which said fastening is also applicable to the fastening of "belts and bands, and to other like purposes," such as gloves, garters, &c. This fastening may be called an improved hook and eye. The eye part is a piece of wire "bent at its

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"middle into a loop or tongue having a nearly circular figure." The wire on each side of the loop "is bent back or towards" the loop, and the ends are curved for attachment to the dress, &c. "The general figure of this part of the fastening is a "heart shape," the loop being at the small end, the curves at the broad end, and the whole "being within the heart "shape;" all the parts "are in the same plane."

The hook part is also of a heart shape, "the ends of the wire "being at the small end." The middle of the wire is bent into "a large loop within the larger end;" the spaces between the loop and the sides form eyes for attachment to the dress, &c. The ends of the wire "are turned at right angles to the "plane in which the other part is situated;" they are made with heads similar to those of ordinary dress pins. "By the "configuration thus given to the hook, its free ends are made "highly elastic."

In securing the two parts together, "the small end of the "hook is passed over the small end of the eye part, and the "free and elastic ends of the hook part introduced into the "eye part immediately behind the wide end of the loop." By drawing the hook towards the small end of the eye, its ends "open outwards, and pass over the wide part of the loop" to the narrow end, when the ends "spring or close upon" the end and fasten the parts together.

In some cases the ends of the hook are "bent at right angles "with the plane of the hook, and then at right angles trans-"versely, their union or meeting being in the centre, thus "forming a bar for engaging with the tongue of the eye."

The alterations required for a brace buckle, a belt clasp, and a garter or glove fastener, are described in the Specification.

[Printed, 8*d*. Drawing.]

A.D. 1864, May 26.—No. 1309.

LUND, Laurentinus Andreas Waldemar.—(*Provisional protection only.*)—"Improvements in the manufacture of "studs, buttons, sleeve-links, brooches, bracelets, ear-rings, "and other such like articles or fastenings." These articles are made of ivory, bone, hard wood or nut, or tortoiseshell, *faced* with gold, silver, or enamel. The material is cut into the required shape; the surface is formed "hemispherical or "oval or otherwise," and a plate of gold, &c. fitting accurately thereon is riveted on to it. The rivet is soldered to the interior surface of the plate, passed through the material, and burred on to the back; or it may be cut with a thread and screwed into the back. In making buttons or sleeve links, the rivet "must be double and soldered at both ends" and sufficiently long to be bent into a ring or eye.

Ivory and bone require to be bent and retained "in the "proper circular or curved position;" for this purpose they are immersed in an acid which will "dissolve or soften the "earthy constituents" without destroying the grain; they are then tied in position in order to set them and put first into hot water and afterwards into cold water; they are then dried in hot sawdust. Tortoiseshell requires to be subjected to hot water.

[Printed, 4*d*. No Drawings.]

A.D. 1864, May 30.—No. 1331.

BONNEVILLE, HENRI ADRIEN.—(*A communication from Georges Edouard Hachin.*)—"Improvements in the manu- "facture of swivels." This swivel is made from one piece of metal "by stamping and bending without filing or solder- "ing."

A piece of suitable length and thickness has a tenon punched out at one end and a mortise at the other; these fit accurately "and this operation forms the most important part of the "invention." A portion near the mortised end is reduced by cutting out parts of the sides or by stamping out part of the middle of the metal and pressing the sides of the opening together, and is then stamped into a ring. The remainder of the metal is bent into a loop, and the tenon and mortise are united into a pin-joint. The customary spring is then fixed inside the loop, the slanting cut is made on the opposite side of the loop, and the swivel is complete.

The inventor prefers to reduce the portion forming the ring in plated metal by stamping out a part of the middle, as such a process does not destroy the plating; he claims this method "of narrowing the ring end."

[Printed, 8*d*. Drawing.]

A.D. 1864, June 1.—No. 1363.

KINNINGS, Luke, GIBBS, George, and EDWARDS, William Thomas.—"Improvements in crinoline fasteners." The fastener is a rectangular piece of metal, from which the corners have been cut away at right angles, and in which a slot has been cut "at right angles with the lengthway or middle " plain part." The piece is indented or creased "in the proper " place for bending over."

One end of the strip of which a hoop is to be made is thrust through the slot "until it is in position to be clipped by the " opposite end of the metal of the clip being bent over it." The other end is then laid "in the reverse direction on the end " partially confined," and secured by bending down on it the other end of the clip, after which the parts for clipping the edges are bent down and compressed together. Sometimes the edges and surfaces of the clip are indented, serrated, or perforated.

Modification :—The slot is dispensed with ; the ends are bent "in contrary directions," and the parts which clip the edges are divided into flaps which "encompass the crinoline " on each side."

[Printed, 8*d*. Drawing.]

A.D. 1864, June 3.—No. 1382.

WILLIAMS, Alfred Hamlyn.—"An improved fastening for " purses, pocket books, belts, and other articles." One part of this fastening consists of "a pin and a spring ;" the other part of a "catch plate." The pin has a head at one end, a flange at the other, and a collar or shoulder immediately above the collar ; the flange is of less diameter than the head and the collar than the flange. On the end of the belt to which this part is attached a plate is fixed on the outer side ; it is recessed on the under side and pierced with a central hole to receive the head of the pin. On the under side of the belt end is fixed a plate also pierced with a central hole "for the lower end of " the pin to work through." Part of the material between the plates is cut away to allow the pin to pass. The coiled spring abuts at one end against the under side of the pin head (which is recessed to receive it) and at the other end against the under plate. The pin "is fitted in the plates" and "is free to be " worked up and down in them."

The catch plate is slotted; at one end the slot terminates in a hole termed "the mouth" and large enough for the flange to pass freely through, and at the other in a hole called "the "socket," of just sufficient size to admit the collar "which "fits it truly;" the slot itself "is only broad enough to admit "the shank." A rim is formed on the under side of the catch plate, and the material of the belt end to which the plate is attached is cut away around it to afford space for the flange to work in.

The parts are connected by pressing the pin down through the mouth and sliding it along the slot into the socket; removal of pressure allows the spring to force the pin upwards thereby fixing the collar in the socket.

In a modification the collar and the socket are omitted. "Inclined protuberances" are formed on the under side of the catch plate, one on each side of the slot; these prevent the pin "from slipping back," as the flange cannot clear them "until again depressed sufficiently."

[Printed, 8*d*. Drawing.]

A.D. 1864, June 23.—No. 1575.

WILLIAMS, William George, and FRASER, John.—(*Provisional protection only.*)—"An improved spring hook or "fastening for suspending or securing curtains, garments, "fabrics, jewellery, and other articles of furniture, upholstery, "ornament, or apparel." This hook is made of wire or steel "in an irregular, hooked, circular, elliptical or other form," according to the purpose for which it is required, and "having "one end sharpened." The sides of the portions which are near the ends are "curved and carried along each other in "reverse directions for a necessary distance from the ends," and in such a manner as to cause them "to press or spring "against each other."

When any article "has been passed through either of the "ends of the hook or fastening and along and past the spring "portion thereof," it cannot be detached until required, "which may be easily done by opening the hook or fastening "and passing the article over either of the ends."

[Printed, 4*d*. No Drawings.]

A.D. 1864, June 28.—No. 1619.

FARMER, George.—(*Provisional protection only.*)—"Improvements in the manufacture of buttons." These buttons are made of wire. The wire is fed into a machine in which it is bent or doubled up into form; it is afterwards pressed or stamped up in dies to secure the ends and to shape and strengthen the button. As the wire is fed into the machine, it is cut by preference "at an angle to its length;" one part serves "as a bar to the button when finished."

The machine has a bed plate supported on standards. Below the plate an axis imparts motion to a spindle which passes up through the plate. The upper end of the spindle carries a tool which bends the wire into the required shape. A box is placed in front of the spindle on the plate, and a tool guides the wire through the end of the box and across the spindle through the shaping tool. The wire is fed by means of an arm over the guide, "which descends and cuts off the length "of wire required for forming a button," the end of the wire being brought against an adjustable gauge on the plate.

[Printed, 4*d*. No Drawings.]

A.D. 1864, July 12.—No. 1730.

DE WAILLY, Clémence.—(*Provisional protection only.*)—"Improvements in the construction of buttons and the fastenings thereof." The shank, whether flexible or of metal, is fastened to the garment by means of a wire, which is passed through a hole in the garment into a piece of gutta percha, leather, or other substance placed underneath between the material and the lining or otherwise, "thereby preserving all "necessary play for buttoning and unbuttoning without the "liability of being unsewn or torn off."

[Printed, 4*d*. No Drawings.]

A.D. 1864, July 13.—No. 1742.

PARSONS, William.—"An improved lever fastening for sleeve links, applicable also for brooches, clasps, solitaires, studs, and other articles of jewellery." A catch is hinged upon one side of a metal disc and is bent over so that its free *end falls* upon the disc. A flat metal spring is secured at its middle to the disc in such manner that its ends may be acted upon by two levers. One of the levers is "a projection in the "catch near to the end" where it is hinged to the disc, "the "effect of this one being to cause the catch to fly open when "it is released from its fastening." The other is a metal thumbpiece "hinged upon the disc exactly opposite to that "part where the catch is hinged;" it has in it a slot or groove, and the free end of the catch, having a corresponding projection, "takes therein upon being pressed, and the "fastening is complete." The thumbpiece is made with a projection upon which the first lever acts.

When it is desired to release the catch, the thumbpiece "is pressed in an "opposite direction."

[Printed, 4*d*. No Drawings.]

A.D. 1864, July 27.—No. 1872.

COUCHMAN, Richard.—"Improvements in the construc- "tion of buckles, hooks, clasps, or similar instruments for "connecting and securing parts of dress or other articles "together." A "simple form of buckle" is made by bending a piece of wire so as to form a loop "having by preference an "opening between the two pointed ends." These ends are "bent inwards towards the loop but projecting slightly "at an angle thereto"; they serve as substitutes for the prongs of ordinary buckles. On the side of the loop opposite to the prongs a hook, eye, or loop is formed or attached for connecting it to one part of the article or dress to be fastened.

One end of the brace, strap, or band is passed through the open loop, and on being drawn back in the opposite direction the prongs enter the fabric or other material and securely hold it.

Sometimes the prongs are made "to meet in the centre of "the loop." Sometimes two of the buckles are "combined "and employed in a similar manner to an ordinary clasp." Sometimes the buckle is stamped out from sheet metal, the prongs "being formed so as to project at an angle inwards;" in this case "the opening in the loop may be dispensed with."

[Printed, 8*d*. Drawing.]

A.D. 1864, July 30.—No. 1898.

HUDDART, George Augustus.—"An improved manufacture of covered buttons." This invention is considered by the patentee to be an improvement on the one for which he obtained Letters Patent bearing date December 17th, 1862, No. 3379, the object being to attach certain kinds of buttons to fabrics by means of pressure.

A disc of soft metal is covered with cloth "which is secured "by turning in the edge of the disc"; it is made with or without a projecting shoulder at its centre. The disc (or its shoulder) is countersunk to receive the hollow end of a stud-pin which is intended to form the shank. A hole is made in the fabric; the pin is passed through the hole into the countersunk hole of the disc, and pressure causes the hollowed end "to spread and fill the countersunk hole."

"A stronger kind of covered button" is made by overlaying the disc with an overlapping disc of softer metal "for turning "in and holding the cloth covering."

In "shell-covered buttons," the front shell is formed with a projection inside for spreading the end of the stud-pin, and a hole is punched through the back shell for the admission of the pin.

[Printed, 6*d*. Drawing.]

A.D. 1864, August 1.—No. 1911.

SASSÉ, Pierre Claude.—(*A communication from Louis François Renard.*)—(*Provisional protection only.*)—"An "improvement in the manufacture of shanks for fancy "buttons of pearl, ivory, and other hard materials." This improved shank consists of a disc of metal or other stiff material wholly or partly covered with cotton or other threads, or with velvet, silk, flannel, or other like fabric. The covered disc is forced into an orifice in the under side of the body of the button or is connected thereto "by other means," the covering or the main portion of the covering of the disc being "on the side intended to be next the dress."

[Printed, 4*d*. No Drawings.]

A.D. 1864, August 13.—No. 2021.

BUFFONI, Jean Baptiste.—"Improvements in the manufacture of bracelets, chains, rings, and other articles of jewellery,

" and in apparatus for the same." The patentee forms these articles of strips of metal "without the aid of soldered joints," obtaining "without the aid of accessory parts an extreme " elasticity and suppleness."

A flat narrow strip of gold, silver, or other material, is passed through suitably grooved rollers, so that the pressure imparts to the metal a "gutter form in cross section," a form "which " constitutes one of the essential features" of the invention. The strip is then wound carefully on a mandrel "with the side " having the flanges outwards"; the mandrel should be "a " little smaller than the required dimensions of the article to " be produced"; the ends of the strip are pinned to the ends of the mandrel. "According to the more or less ornamental " form to be given" to the article, the mandrel will be "flat, " rounded, or moulded on the outer surface." Two wires of lead or zinc, "of rectangular cross section," are coiled in the gutters of the strip, one on each side close to the flanges, leaving a space between them. An upper and outer strip, "of " similar form to the one already described" and forming " the exterior of the bracelet," is then wound on; "this is " superposed in an inverted position and so disposed as to " embrace within its groove two adjoining flanges of the inner " coil and two of the lead or zinc wires." The coils are now slid off the mandrel; the ends of the strips are secured together; and the wires are removed either by heat or by acids. "The double coil will now possess an amount of " elasticity limited only by the contact of the adjoining " flanges of the contiguous coils."

To form a bracelet the two ends are joined by a hoop and a pin or pins. If the junctions of the coils are at too great "an " inclination across the breadth," the coils whilst on the mandrel are pressed "at one edge" of the mandrel, while " resistance is offered at the other edge"; this imparts "such " an amount of twist to the whole as to bring all the outside " joints at right angles or directly across, while the whole of " the inclination will be transferred to the junctions on the " inside."

Modifications of the methods of making and coiling the strips and of the shape of the mandrel, and various ways of fastening and ornamenting the articles are described in the Specification.

[Printed, 10*d*. Drawing.]

A.D. 1864, September 7.—No. 2185.

BURGESS, Edwin.—(*Provisional protection only.*)—"An "improved watch protector." This protector is a case of metal or other suitable material, in appearance similar to the case of a hunting watch. Part of one side is hinged "at or "about the centre line," so as, when opened, to allow of the watch being withdrawn, and when closed to retain the watch therein "by means of a suitably arranged spring"; the bow only of the watch is exposed. This case is secured to the inside of the pocket "by means of a small eye or ring" attached to its edge; the eye passes through the pocket "and is "held by a spring, hook, or other suitable fastening attached "to the garment."

[Printed, 4*d*. No Drawings.]

A.D. 1864, September 8.—No. 2196.

NEWTON, Alfred Vincent.—(*A communication from Isaac Merrit Singer.*)—"Improvements in sewing machinery, parts "of which improvements are applicable to ornamenting "fabrics and covering buttons." The part of this invention which belongs to the present series relates to machines adapted to the working of button holes and covering buttons "which "have a central hole."

In the machine for working button holes the needle has "both a vertical and a vibrating motion," the latter enabling it in its descent "alternately to pierce the cloth and to strike "beside the edge of the cloth or into the slit cut to form the "the button hole." The loops, as they are formed beneath the cloth, are locked and secured by "any of the well-known "arrangements of looper for producing the single chain "stitch." A disc keyed to the forward end of the driving shaft "carries an excentric stud" on which is fitted a roller "that works in a slot cut in a cam or cross plate." This cam plate is carried by the needle bar; it is "extended on one side "and forms a socket which encircles the presser bar." Jointed to the upper end of the needle bar is a pendent arm having the needle attached to its lower end and imparting the vibrating motion. Fixed to the upper end of the presser bar is "a cap "plate" having a socket through which the needle bar slides freely. Thus the needle bar and presser bar "although made

" round are prevented from turning on their axes." The arm which carries the needle passes down in front of the needle bar, " and at its lower end it is cranked at right angles and passes " through a fork at the lower end of the bar." A rocking motion is communicated at the proper time to the arm by a lever having its lower end forked to embrace the arm and its upper end actuated "by a face cam keyed upon a supplementary " shaft." The amount of rocking is regulated by a screw, and the return motion of the rock lever is obtained by means of a coiled spring, so that the arm and needle "may be " vibrated to any desired distance at the proper time."

In the machine for covering buttons which have a central hole, the table is fitted "with a throat plate having the requisite holes for allowing of the descent of the needle when " its position laterally is shifted" and "a slot or slots to " permit of the escape of the thread." The throat plate carries a central stud "small enough to enter the central hole " in the button to be placed thereon." The amount of vibration is to be adjusted "to the semi-diameter" of the button. The ordinary presser foot is to be changed for one "having a " circular form and of less diameter than the button to be " covered." The loops are locked by "any suitable looper," and "on the tightening of the stitches the under part of the " button will be covered."

Modifications of the throat plate, means of supplying thread to the needle at the requisite tension, looping arrangements which the inventor proposes to use, and the connecting parts of the machines, are fully explained in the Specification.

[Printed, 3*s*. 6*d*. Drawings.]

A.D. 1864, September 22.—No. 2325.

BUSSEY, GEORGE GIBSON.—"Improvements in the manu-" facture and fixing of buttons, studs, and bosses" to articles of dress, such as "boots, trousers, gloves, and such like," also " on accoutrements, portmanteaus, cases, and leather goods " generally."

A hole is drilled or punched through the middle of the button, &c. A rivet, of proper gauge to fit the hole and of sufficient length to pass through the button and the material to which the button is to be attached, is passed first through the material and then through the hole, and is then riveted upon the surface of the button and finished off "by means of "a set punch of a plain or ornamental character."

[Printed, 4*d*. No Drawings.]

A.D. 1864, September 23.—No. 2338.

WOODBURY, WALTER BENTLEY.—"An improved method of "producing or obtaining by the aid of photography, surfaces "in 'relievo' and 'intaglio' upon aluminous, vitreous, me"tallic, or other suitable materials." The improvement consists in "producing a 'first mould' of bichromatized gelatine "having varying thicknesses obtained from or rendered by "the lights and shadows of a photographic negative." The mould is electrotyped, and from the metallic mould or pattern "castings may be obtained in any fusible or plastic material."

In an "Amended Disclaimer and Memorandum of Altera"tion," filed March 5th, 1867, the patentee states that since his application for these Letters Patent he has discovered that "the principle of producing such a first mould has been used "experimentally but not for the purposes" of his invention. He does not therefore "intend to make any separate claim to "the production of a 'first mould' in bichromatized gela"tine."

The gelatine is prepared by dissolving about one part of sugar in eight parts of gelatine, clarifying the mixture with albumen, and then filtering it; when required for use there is added to each ounce a solution in water of ten grains of bichromate of ammonia. The combined solution when "nearly cool" is spread on a sheet of clean glass to the thickness of about one-eighth of an inch, and after five or six hours the coating is stript from the glass. The side which has been in contact with the glass is laid on the negative, and "the "lines in the negative are produced as clearly at the back of "the gelatine as the front" by placing the negative with the gelatine attached "in the focus of a condenser of a solar "camera or other condenser of the sun's rays" for from half an hour to an hour. The gelatine is then "lifted from the "negative and fastened by india-rubber cement to a piece of "stout card coated with lac varnish and held under a stream

" of hot water until the parts not acted upon by the light are " washed away." Two other methods of preparing the negative are described.

The prepared negative when " surface dry " is brushed over or coated with bronze powder, plumbago, or silver precipitated in metallic form; it is then put into a solution of copper until it is coated to the thickness "of about the sixteenth " of an inch." The copper coating being removed from the gelatine is mounted in lead, or by preference in gutta percha, and it is used "to produce repetitions or copies in any semi- " transparent material."

[Printed, 4*d*. No Drawings.]

A.D. 1864, October 7.—No. 2467.

TURNER, John Pemberton. — (*A communication from Pierre Labat.*)—" Improvements in the manufacture of certain " kinds of metallic buttons." Shanked metallic buttons having bodies of a spherical or nearly spherical shape are made from two pieces without soldering or riveting. One piece (forming the body) is a blank, by preference hexagonal and having either plain or concave sides. The blank is raised by means of dies and pressure "into a short hollow cylinder with a closed " hemispherical bottom." The other piece, forming the shank, is either of wire or a thin strip of sheet metal raised "into the " form of a series of three arches joined together." The middle arch is shaped into an eye; the outer ones are "nearly " closed upon one another." The shank thus made is placed in the die of a press; the body or shell is placed upon it, and by the descent of the punch "the serrated parts of the open " end of the shell are brought together and closed upon the " neck of the shank."

" Ball-shaped basin buttons " are made from sheet metal in one or two pieces and with or without ornaments. If made from one piece, a circular blank is raised into a cup or basin shape, and the edges are turned inwards so as to form a flange. The blank "only requires to have its closed end properly " shaped and pierced with holes to be complete." Or the bottom may be provided with a shank by passing a shank stem through a hole and riveting the end of the stem inside the bottom. These buttons may "contain some fancy ornament" provided with thread holes.

If made from two pieces, the inner piece is cupped of such size "that its open end will fit over the flange made in the "outer shell;" the ornament is introduced into the inner shell, and the two shells are closed upon one another. "The "bottom of the inner shell having been pierced, the button "is complete."

In "steel basin-shaped buttons," the inside of the steel is polished as well as the outside. The button consists of two shells, the outer of steel, the inner of gilt or silvered copper. The outer shell is raised into "a trough-like form;" the top of the shell is "pierced out," and the outer sides of the trough are bent inwards. This shell "can readily be polished" on the inside. The copper shell suitably shaped is pierced with thread holes, and the two shells are closed upon one another.

[Printed, 1*s*. Drawings.]

A.D. 1864, October 12.—No 2514.

TAYLOR, John George.—(*Provisional protection only.*)— "Improvements in the manufacture of dress fastenings and "ornaments." The first improvement consists in stamping out the tongues and frames of buckles in a die, and in uniting them "by pressure without the aid of solder."

The second, in connecting the parts of buckles, hooks, and other articles "by means of eyelets which are formed of a "single piece with the frame and folded down or turned over "to permit of the passage of the pin or rivet uniting the "parts."

The third, in a method of attaching a ribbon or waistbelt to a buckle or clasp without sewing. Two slits are cut in the frame, and the ribbon, &c., "is doubled over" in the slits "in order to fix it in position."

The fourth, in ornamenting buckles, &c. "by means of rivets "having facets or otherwise ornamented;" they are fixed in the article and riveted "at back on a second plate of similar "form."

The fifth, in furnishing buckles "with a plate in their "interior, the edge of which is turned up in the form of a "hook, whereby it may be connected to the frame of the "buckle which is similarly formed at one end."

[Printed, 6*d*. Drawing.]

A.D. 1864, October 15.—No. 2543.

BRIERLEY, John Henry.—(*Provisional protection only.*)—"An improvement in ladies' waist buckles." One or more metal loops are soldered "to the moveable bar to which the "prongs are attached." A metal catch is made with one or more hooks "so placed that they can at pleasure be attached" to the loops.

One end of the belt is stitched to the catch, and a point is formed at the other end. The point is threaded through the buckle, and the prongs are passed through the material "at "such distance from the end of the belt that the belt will fit "the wearer."

To secure the belt the hooks are passed through the loops; consequently the belt can be fastened or loosened "without "damaging the material of which the belt is made."

[Printed, *4d.* No Drawings.]

A.D. 1864, October 18.—No. 2577.

LUDWIG, John.—(*Provisional protection only.*)—"Improvements in the means of setting or securing stones and "other materials applicable to jewellery and other manufactures." The inventor prepares a model of the article which he intends to produce with stones set therein, and puts it into the bath of a galvanic battery for the purpose of obtaining a matrix, which he uses as a mould. He puts the stones to be set in the recesses of the mould and causes them to adhere therein by a suitable solution. He places the mould (its face being prepared so that the deposited metal will not adhere to it) and stones in the galvanic bath, and "the metal deposited "will surround the stones and otherwise so as to produce an "exact imitation of the original model." The cast will, when removed from the bath and mould, "bring out with it the "stones" firmly set therein. He then makes the cast into the article required and electro-plates or gilds it. Instead of metal moulds he sometimes uses moulds of gutta percha or other material.

Sometimes he forms a setting from a piece of glass or other material in the galvanic bath. This setting he prepares "by "applying wires parallel or otherwise around the mounting "and secured at back or by passing through holes." He places the stones to be set between the wires and puts grains of silver or other metal "around the stones in the interstices "between them and the wires," causing the stones and grains to adhere in position by suitable adhesive matter. He puts the whole into the galvanic bath, and sufficient metal is deposited thereon "to complete the setting and fix the stones in "position."

"According to this last method" he can stamp a metal setting which "may occupy the centre of a metal surface:"—He cements the stones to the base of the setting; coats "the "general surface of the stamped articles with a non-conducting matter;" puts grains of silver round the edges of the stones, and places the whole in the galvanic bath for a deposit of metal thereon "which adheres to the base, forms the setting, "and fixes the stones."

[Printed, 4*d.* No Drawings.]

A.D. 1864, October 21.—No. 2610.

DAVIES, George.—(*A communication from Willoughby Hahn Reed.*)—(*Provisional protection only.*)—"Improve"ments in buttons, and in devices for securing the same to "fabrics." In some cases the button is made with a tubular shank; a washer is placed on the shank; the shank is thrust through the fabric; a second washer is placed on the shank, and the shank "is then expanded, turned over, or riveted."

In other cases the button is made with a central hole, round which is an annular ridge. The head of the shank is of any convenient form, and the end "is countersunk so as to leave a "central rounded projection or boss surrounded by an annular "and angular projecting rim." The shank is passed through the fabric from the back, through the hole of the button, and is then by aid of a suitable punch and hammer expanded over the ridge of the button.

To facilitate the introduction of the hollow shanks into the fabric "without cutting or breaking the threads of the same" a sharp-pointed conical steel pin is used; it is inserted into the shank and withdrawn when the latter is passed through the fabric. The pin may be made so as to act with a solid rivet instead of with a hollow shank.

[Printed, 4*d.* No Drawings.]

A.D. 1864, October 24.—No. 2631.

SCOTT, John William.—"Improved means of attaching "buttons to garments and other articles, and improved tools "for fastening the same." The button shank may be a single pin, or two or more pins, or a wire bent into a loop; it may be attached directly to the button or to a loop on the button. The shank is passed through the article to which the button is to be attached, and then through a hole in a dished washer; "a "ball, burr, or spreading" is then formed on the end thereof and lies in the dish free to turn therein.

The tool is composed of (1) a frame; (2) a pair of moveable jaws pin-jointed to the frame; (3) a spring acting against the upper portion of each jaw and giving it a tendency to open; (4) a lever fitted to the upper part of the frame and formed with a crank arm; (5) a roller carried by the crank arm and acting on the head of (6) a plunger "terminating at bottom in "a heading, burring, or spreading bolt."

The outer end of the shank is placed between the jaws; the lever is depressed; the jaws are thereby brought together, and the bolt at the same time comes down on to the end of the shank. As soon as the lever rises, the spring open the jaws.

The tool is sometimes made "in the form of a pair of "pliers:"—One handle carries a fixed jaw and an upright. An opening in the fore part of the handle gives passage to a bolt worked by a lever. One end of the lever is pin-jointed to the upright, the other is connected by a pin to the moveable handle of the pliers; this handle carries the other jaw. The pins connecting the bolt to the lever and the lever to the moveable handle work in slotted holes.

[Printed, 6*d*. Drawing.]

A.D. 1864, November 1.—No. 2703.

ASTON, William.—"Improvements in the manufacture of "certain descriptions of buttons," namely, those known as linen buttons. The button is made with a front shell pierced with a central hole, and with a back shell having a concentric projection thereon and a central hole pierced through the projection. Each shell is formed with an annular flange. The disc of fabric for the front shell has removed from its middle a circular portion "a trifle smaller than the hole through the

" front shell " in order that it may be "gathered in and pressed radially back around the hole of the shell ;" its outer edge is "gathered in over the edge " of the shell. A small disc of fabric "is laid on the concentric projection on the face " side of the back shell," and the two shells "being put " together and closed over with a strong fabric at the back " leaves the button in a finished state, having on the front " side a small concentric projection rising from the concave " face of the button."

The back shell may be made with a bar for the thread to ride on. The front covering may be wholly or partly of "silk " or other approved fabric." A metal shank with an ornamental head may be passed through the button and be opened out at the back.

[Printed, 8*d*. Drawing.]

A.D. 1864, November 17.—No. 2870.

SHEPPARD, **Joseph**. — (*Provisional protection only.*) — " Improved arrangements for the protection of watches, purses, " and other valubles worn on the person." Loop holes or eyelets are introduced inside the pockets of coats, waistcoats, and trousers ; through these a watch-guard, chain, or cord can be passed from the article round the neck, or be fastened to a button inside the garment. The eyelets are secured by riveting their shanks over metal washers.

In trouser pockets " which are sometimes made double," security is increased by means of "a flap which turns over and " is fastened with a button or a hook and eye." In this case the loop holes or eyelets are to be placed "both in the partition " between the pockets and in the inner face of the inside " pocket."

Hooks and eyes are fastened on to coats and waistcoats between the buttons and button holes, so that the garment " may be hooked in addition to being buttoned."

[Printed, 4*d*. No Drawings.]

A.D. 1864, November 17.—No. 2873.

BOUSFIELD, **George Tomlinson**.—(*A communication from Lauriston Towne.*)—"Improvements in the manufacture of " ornamental chains." The links of these chains are held together without the aid of solder, and the novelty consists in "the peculiar fashion and structure of the link." Each link is a piece of thin metal having five arms and the end of each arm furnished with a cross bar "to give increased strength" to the chain. The arms are not equidistant; the whole link forms "a figure, the long sides of which are similar, and the "short sides or ends are dissimilar."

The inventor makes a chain, "the diameter of which in one "direction shall be greater than in the other," by placing "the long sides of each succeeding link over the similar "sides of the preceding one" in the following manner:—The arms of a link are bent at right angles to the body, so that "the base will make an eight-sided figure" having one diameter longer than the other. A second link is then placed over the first, "but with reference to it, changed end for end, "so that the arms of the latter will interlock with the arms "of the first." The arms of the latter link are then bent at right angles to the body, and the arms of the first link "are "bent down so as to clasp the body of the second." The chain is made in this way by successive links, "each being "placed and held in the way described."

[Printed, 6*d*. Drawing.]

A.D. 1864, November 26.—No. 2959.

LUND, Laurentius Andreas Waldemar.—"Improvements "in the manufacture of studs, buttons, brooches, bracelets, "ear-rings, baskets, vases, and other such like articles and "fastenings." These articles are made of ivory, bone, ebony or other hard wood or nut, tortoise shell, pearl, horn, vulcanized rubber, &c., and the improvement consists in applying a thin plating of gold or silver to the exposed portion of the article.

The article "is formed of the desired shape or outline;" the plate of gold or silver is made to fit accurately over or upon the shape; a rivet, soldered to the interior surface of the metal, is passed through the article, and is secured by enlarging the outer end. Or the rivet may be made to screw into the article.

In making buttons or sleeve links the rivet must be double and long enough for its end to be made into a ring or eye.

For some articles the ivory requires to be softened and to be pressed in a mould. The softening is effected by immersing it in water or some diluted acid "which will act upon or " dissolve or soften to a certain extent the earthy constituents." If it is not to be moulded, it is then tied or set in position and is put into hot water or hot sand; when set, it is placed in cold water and finally is dried in hot sawdust.

[Printed, 4*d*. No Drawings.]

A.D. 1864, December 3.—No. 3014.

BROOMAN, Richard Archibald.—(*A communication from François Xavier Alexis Fauvelle Delebarre and Jules François Xavier Fauvelle Delebarre.*)—(*Provisional protection only.*)—"An improved comb or ornament for the back of the " head of ladies." This ornament is composed of a plate of ivory, mother-of-pearl, bone, vulcanite or other plastic material, and an ornamental pin by which the plate is secured.

The plate is "curved to suit the plait or style of coiffure," and near each end is a stud carrying a loop or eye. The pin is "independent;" it is passed through the loops; to prevent it from becoming displaced, it is slotted at the part which comes opposite one or both loops, and the slot "is opened out " to make a swelling" in the middle; for greater security it may be notched to retain the loop. Or "a spring catch as in " umbrella sticks may be applied to the pin." At each end of the pin is an ornament in the shape of a ball or otherwise; one is a fixture; the other is put on after the pin is passed through the loops and is kept in place by an elastic cord attached to both.

[Printed, 6*d*. Drawing.]

1865.

A.D. 1865, January 7.—No. 60.

BLACKHAM, Joseph Josiah.—"Improvements in brooch or " other like fastenings" which require a pin or bar at the back. The pin or bar is a piece of wire coiled at one end into a circle or circles, thereby forming a spring at that end similar to that of a nursery pin. The coil forms an eye for receiving the axis on which it is to work, and the end of the coil "projects "forward beyond the eye" and acts as a spring, so that, when the point end of the pin is released from its detent, it "will elevate itself from the back plane of the brooch."

The detent is a piece of wire or its equivalent so shaped that it forms not only a catch for holding the point end but also "a shield around the point" to protect it from injuring the wearer.

The ears which serve as bearings for the axle pin and the detent may be made in a variety of ways shown in the annexed sheet of drawings.

The patentee applies his invention to studs, solitaires, and mourning or composition brooches; he describes also an apparatus which he has found to be conveniently adapted for "bending the ends of the wire pins into the circular coil."

[Printed, 8*d*. Drawing.]

A.D. 1865, January 14.—No. 120.

RICHARDS, William Henry. — (*Provisional protection only.*)—"Improvements in sleeve links, which improvements are also applicable to other dress fastenings and ornaments" which may be fastened "by a hinged and hooked bar or "tongue." The inventor describes his improvements as applied to a sleeve link. "On the inner side of the body" of the link he attaches a plate "having a raised hollow bar or "channel in its middle." A rod slides in the channel, one end "protruding from the edge of the body." He hinges "to "the edge of the under side" of the link a hooked bar or tongue of elastic metal "capable of extending nearly from "side to side" of the link. Across the channel, at the side opposite to the hinge, he makes a slot in which the free end of the tongue can be made to engage, the free end being "bent "inwards or nearly doubled upon the other part so as to form "a small hook or snap."

In order to fasten the link the tongue "is passed through "the sleeve in the ordinary way and closed or shut down "upon the back of the body;" the hook (by pressure on the tongue) engages in the slot. In order to unfasten the link, the protruding end of the rod "is pressed inwards;" its opposite end "is thereby made to press" upon the hook of the tongue "and liberate it from the edge of the slot." The motion of the releasing rod "is limited in either direction" by a cross piece. The bottom of the channel is covered "by "means of a second plate folded over the edges of the first "described plate."

[Printed, 4*d*. No Drawings.]

A.D. 1865, January 20.—No. 175.

SEARLE, Charles.—(*Provisional protection only.*)—"Im-"provements in apparatus for securing studs in shirt fronts "and similar garments." The studs are prevented from becoming unfastened by means of "safeguards" consisting of pieces of leather or other suitable material either separate or united by lengths of gut, silk, or other filament. In each piece there is a stud hole or a slit just large enough to allow of the insertion of the inner end of the stud after passing through the stud holes in the shirt front.

[Printed, 4*d*. No Drawings.]

A.D. 1865, January 21.—No. 185.

GORDON, Alice Isabel Lucan.—"Improvements in clasps "and snaps or other similar fastenings." The patentee claims improvements (1) in clasps "used for jewellery and other pur-"poses;" (2) in barrel snaps "used principally for necklaces;" (3) in catches for the pointed ends of brooch pins.

1. One variety consists of a tongue having a notch cut in its upper edge, and of a case having an opening in front for the admission of the tongue and an opening in the top for the admission of a catch carried by a lever. The lever is mounted on a pivot in the upper part of the case; it carries on its short arm a knob by which the short arm can be depressed so as to raise the catch from the notch; its short arm is constantly kept pressed up by a coiled spring inside the case; its short arm is within, and its long arm is outside the case. The catch may be carried by a slide instead of by a lever.

In another variety two plates are locked together by a catch. The back plate is pierced with a hole "of the form of a [double "key-hole" or of any other suitable shape. The front plate is pierced near its middle with a circular hole in which a pin revolves. The pin carries at the back of the plate a catch which passes through and fits the key-hole. By turning a rosette or other ornament on the head of the pin the plates will be locked together.

In another variety one plate has a hollow cylinder fixed to its outer edge. A portion of the middle of the cylinder is cut away and fixed to the other plate, so that when the plates are put together "the cylinder is made perfect." The first-named plate has inside one part of the cylinder a bolt which is pushed forward by a coiled spring and is thrust back by a projecting pin.

2. One cylinder slides within another; the outer one has a projection on the inside, and the other is slotted "in the form " of a bayonet slot."

In another variety of snap the inner cylinder is replaced by " a piece in the form of a double-bitted key." The outer end of the outer cylinder is closed by a plate having a corresponding key-hole and at its back "a notch of the same form but at " right angles to the key-hole." At the back of the plate is a loose plate sliding in the cylinder, and behind it is a coiled spring. When the key is thrust through the hole and "turned " one quarter round," the loose plate "will force the bits into " the notch."

3. The catch is made " in the form of a self-closing spring," so that the pin cannot be drawn out of it "without considerable " pressure."

[Printed, 8*d*. Drawing.]

A.D. 1865, February 8.—No. 355.

SINGER, JULIUS.—(*Provisional protection only.*)—"Im- " provements in garments for ladies,' gentlemen's, and chil- " dren's wear."

1. Trousers :—Buttons and braces may be dispensed with. The trousers "are opened at the sides and fastened behind " and in front by either long tabs or straps and buckles, or " with belts and elastic bands." An "imitation fly" is formed in front.

2. Pockets :—These are made double, that is "with a lining " somewhat shorter than the pocket and with an opening at

" the bottom contracted by elastic webbing." Anything " inserted in the pocket is pushed through the contracted " opening and can only be got out by expanding the opening."

3. Waistcoats :—The first improvement consists in cutting the lower part of the back of such shape that it covers the " loins ;" elastic or other straps affixed at the sides make the back "fit smooth." The collar is stitched "to the fore part, " which it keeps better in shape ;" it can be "folded inwards " and worn for dress to show the shirt or buttoned up for " business wear."

A second improvement consists "in sewing them close in the " front" and making them to open either at the back or at the sides ; the fastenings may be buttons and button holes, straps and buckles, or elastic bands. The front is made with " button holes, or imitations and buttons so as to present the " front" of an ordinary waistcoat. This improvement is applicable to "ladies' and children's garments, especially " stays."

4. An improvement in ladies' dress consists "in forming " a box plait" in a jacket ; it passes " under the arm and down " the sides." An elastic webbing inserted throughout "gives " ease and comfort to the wearer, inasmuch as it will lap over " or expand when tight." This improvement is applicable to " gentlemen's and children's clothes."

[Printed, 4*d*. No Drawings.]

A.D. 1865, February 11.—No. 385.

HASELER, George Carter and **HASELER, John Bush.**— " Improvements in the manufacture of brooches, part of which " said improvements are applicable to the manufacture of " lockets." The patentees divide their invention into two parts, one relating to "the bodies for brooches," the other to arrangements by which the body of a brooch "may turn or " revolve."

The body is made "without seam from one piece of metal" by raising the same from a flat metal blank and curling the edges to form "a frame or recess for the reception of an ordi" nary box and glass." If the body is to be made from very thin gold, the patentees "use a lining of base metal" to prevent the gold "from becoming uneven in the part curled in ;"

this lining may afterwards be removed (if desired) "by "dissolving the same in acids."

Two holes are pierced opposite each other, one on each side of the body of the brooch; a wire is passed through the holes, and to each end of the wire is attached a metal ornament at right angles thereto. Or each ornament may be connected to the body by a separate pivot, thereby doing away with that part of the wire "which runs through or across the interior of "the body."

The brooch joint and tongue and the catch ring are fixed, one to each ornament.

[Printed, 6*d*. Drawing.]

A.D. 1865, March 2.—No. 594.

CLARK, William.—(*A communication from Joseph Edouard Mittler senior.*)—"Improvements in the manufacture of buttons." The body of these buttons is "of glass or other silicious "or bituminous matter, fusible or capable of being softened by "heat, or of matters hardened by baking, as ceramic substances, or by exposure to the air, such as cement, mastic, "or paste." The chief novelty consists in introducing a flexible tuft or shank.

A metal eyelet is recessed into the material forming the body, the edges being left projecting. The body is then stamped with any suitable ornament, and the whole is baked anew. When cold, the eyelet is cleaned, the face of the body is polished, a tuft is put into the eyelet, the edges of the eyelet are turned down on the tuft so as to partly enclose it, and the button is complete.

Sometimes the inventor attaches wires or threads or lace to the tuft and passes the same across the face of the button so as to "produce an entirely novel ornamentation." Sometimes he embeds spangles or metallic particles in the face of the button. Sometimes he attaches the tuft to the eyelet (or to a socket) by means of a metal ring. Sometimes he fixes the tuft by means of glue or paste into a cavity made in the body of the button.

[Printed, 8*d*. Drawings.]

A.D. 1865, March 22.—No. 795.

FARMER, George.—(*Provisional protection only.*)—"Improvements in machinery for cutting, punching, raising, "shaping, or drawing-through sheet metal by means of tools "and dies." The machine described is arranged for cutting out, shaping, &c. metal blanks "into articles known as crinoline clips," but the tools and dies may be readily arranged for cutting out and shaping "shells for buttons" and "a variety "of other articles."

The feeder consists of a slide and connecting rod actuated by "a slotted cam and crank motion." When the metal (previously cut into strips) is fed forward between the tools and dies, it is securely held "by the end of a pressing lever "actuated by a cam on the main shaft." The feeder and lever are fitted with guides "which prevent the metal from "bending." The end of the strip when fed forward "is conducted under a covering guide and rests upon a bed;" this guide exposes that portion only of the strip which is to be first cut out by a punch of suitable shape "to form the outline of "the intended blank." The blank thus far formed is by the next movement of the feeder "carried over the bed of the "drawing-through tool," and when the punch next descends, the blank "is cut off by a cutter combined with the punch "before referred to, which at the same time cuts out the "parts to form another blank." When the blank is cut off, it falls on to "and is forced through the drawing-through "opening in the bed by a slide," which turns up the sides ready for being used as a crinoline clip. The drawing-through tools are furnished with suitable stops and guides. The punch, cutter, and drawing-through tools "are carried by slides "mounted in a box or guides, the slides being connected to "levers" which are actuated by cams.

[Printed, 4*d*. No Drawings.]

A.D. 1865, March 25.—No. 843.

WOLVERSON, Edwin.—"Improvements in the manufacture "of ornamental metallic chains." The patentee describes "the general construction of a hollow cylindrical chain," the links of which are fastened together without solder.

Each link is cut out from a blank "having a somewhat "cruciform shape," namely, a central disc with "four equidistant radial arms." The arms are forked, "the forked "part tapering down near to the junction of the arms with "the central part of the blank." The arms are bent into a plane at right angles to the central part, so that each link "consists of a short hollow cylinder or cup closed at one "end." The upper ends of the arms "are brought close "together so as to touch each other." The sides of the cup have ornamental perforations in them, and the perforations in the finished chain are in a line with one another.

In making a chain a blank is placed "in the forked parts "of the arms" of a bent-up link, "the central part of the "blank being situated within the link, and the arms crossing "the said link through or inside the forks thereof, and extending beyond the said forks." Another link is made and fastened to the preceding one by "bending the upper ends of "the arms of the link upon the top of the central part of the "blank and raising the arms of the said blank into a plane at "right angles to the central part." Those parts of the lower link which are closed upon the bottom of the upper link are situated "in the small ornamental spaces between the raised "arms or sides" of the upper link, and the raised arms of the upper link are situated "between the spaces in the closed "forks" of the lower link. The closed ends of the forks are prevented from being drawn out of the spaces "by small "swells or projections on the inner sides of the extreme "ends" of the forks. In continuing the process each link is put on "in the same line as the preceding one," and the links of the completed chain "are capable of motion both "laterally and in the direction of the length of the chain."

Chains of different patterns are produced "by varying the "shape of the arms of the blanks internally and externally." The number of the arms also may be varied. Several patterns are shewn in the annexed sheet of drawings.

A less flexible chain is produced by perforating the central part of the blanks and closing the ends of the arms round the perforations; in this construction the arms "are made of "greater length to permit their ends to be folded around the "central ring" or perforation.

[Printed, 8*d*. Drawing.]

A.D. 1865, March 28.—No. 881.

PULVERMACHER, Isac Louis.—"Improvements in fastenings for pins, buttons, and other articles with metallic

" backs." Brooch fastenings are constructed in the following manner :—The pin is hinged to the frame in the ordinary manner. Near the opposite end of the frame is fixed "a " segment of a tube or fork on which the pin rests." The outer end of the segment is formed into a nut which receives a hollow screw with a milled head. The pointed end of the pin is placed in the open part of the tube or in the fork, and the hollow screw is advanced to enclose it.

Sometimes the pointed end is secured by means of "a hollow " triangular box with a slot in two of its sides." In the box is "a piston free to be drawn to and fro"; the piston being withdrawn allows the end of the pin to enter the box, and then " being advanced closes egress to the pin through the slot."

Fastenings for buttons with metallic backs :—A disc is stamped at two opposite ends in a manner shown in certain figures in the sheet of drawings; the parts at one end are turned down and form a socket for the upper portion of a pin having "a round or olive or other shaped head," and the parts at the other end are turned down to form a shield for the reception of the pin point.

Sometimes the "round-headed pin" is made with two prongs, and two seats are provided for the reception of the points. The prongs are secured in their seats by means of a cross pin "formed with a lump" and "with a ball" held between two lugs; "the pin is free to turn on the ball."

Each of the foregoing arrangements is susceptible of modifications which are described in the Specification.

[Printed, 8*d*. Drawing.]

A.D. 1865, April 4.—No. 947.

JENKINS, Henry.—(*Provisional protection only.*)—"Im" provements in the fastenings for sleeve links, solitaires, and " other like purposes." At one end or side of the back plate the metal is formed so that "by bending up it will form a " part of the hinge joint," and the other side or end "is raised " to engage with the tongue or bar." This tongue or bar is " secured by a wire passing through it and the corresponding " part or parts in the back plate so as to complete the hinge " joint." Or the joint may be made separately and soldered or otherwise fixed to the back plate. The detention of the *tongue* or bar is effected "by its being bent so as to form a

" spring and catch in connection with the back plate within " the projection or raised part."

[Printed, 4*d*. No Drawings.]

A.D. 1865, April 8.—No. 1007.

DAVIES, GEORGE.—(*A communication from Willoughby Hahn Reed.*)—" Improvements in buttons and in devices " for securing the same to fabrics." 1. The button head consists of two plates; the under plate is perforated and recessed in the middle so as to form a projection on the outside. A tubular shank is passed through the hole; its upper end is bent down into the recess; the recess is filled up with "any hard material," and the edge of the upper plate is bent over the under plate. To secure the button to a fabric, the fabric is perforated; a washer is placed on each side of it; the tube is thrust through, and its outer end is bent down on the lower washer. The upper washer is made with a projection which meets the projection on the lower plate; "thus " a smooth metal surface" is presented to the edge of the button hole. This arrangement admits of modifications.

2. The upper surface of the button has on its edge a " rounded rib;" within this is a "smaller rib," and within this "an annular ridge" which is on the edge of a central hole. A rivet forms the shank; one end has "an appropriate head;" the other end is "countersunk or recessed" so as to form an " annular and angular projection" surrounding a "central " rounded projection." To fasten this button to a fabric, the stem of the rivet is passed through the fabric and the hole in the button; a punch "is placed with its countersunk end on " the countersunk end of the stem;" and the annular flange of the rivet is turned down over the annular ridge of the button by aid of a hammer. This arrangement also admits of modifications.

3. The inventor uses "a sharp pointed steel pin" for the purpose of perforating fabrics "without breaking or cutting " the threads:"—If the shank of the button is tubular, the pin is made with a stem which enters the tube; the stem is smaller than the base of the pin so that a shoulder is formed. If the shank is a solid rivet, the lower end of the pin is perforated to admit the stem of the rivet.

[Printed, 8*d*. Drawing.]

A.D. 1865, April 21.—No. 1110.

GREAVES, Thomas, and WRIGHT, John Skirrow.—"Im-" provements in the manufacture of buttons." The improvements relate to brace buttons. In such as are made with a bar across the middle a loose piece of metal is turned over and closed on the under side of the bar so as to form a tube or roller round it.

In such as are pierced with holes, the edges of a thin piece of metal are forced through the holes and turned down on the under side of the button.

In each case a perfectly smooth surface is obtained for the thread to pass over.

[Printed, 4*d*. No Drawings.]

A.D. 1865, April 26.—No. 1165.

HEAVEN, Charles William.—"A new or improved fasten-" ing for fastening articles of dress, which said fastening is " also applicable to the joining of belts and bands and to " other like purposes." This fastening may be used as a substitute for the ordinary hook and eye; it consists of two parts, which may be called the hook and the eye parts. The invention is described as a dress fastening.

The hook part is a piece of wire bent into a shape "nearly " resembling that of a horse-shoe," but having "a coil or loop " at the curved part" to give it greater elasticity. The free ends "are turned perpendicular to the plane in which the " horse-shoe shaped part is situated," and "the extreme ends " are turned outwards so as to form hook-shaped termina-" tions." This part of the fastening is sewn to the dress by the coil or loop.

The eye part is "a rigid loop or loops;" it is made by preference "of the shape of the figure 8;" one loop serves for attachment to the dress, the other for the hook part to engage with. As this part is not elastic, it may be cut out of sheet metal.

To connect the parts "the hook part is compressed between " the thumb and finger, and its hooked ends are brought " sufficiently near each other to permit of the end of the " fastening being introduced into the loop of the eye part."

For belts and bands the two parts are made by preference

" of the same breadth as the belt or band, and the loops may " be made angular instead of curved."

The elasticity of the hook part may be increased by additional coils or loops on the sides. The hook part may be fastened by an eyelet instead of by sewing, and an eyelet may be substituted for the eye part.

The invention may be used as a curtain hook; the hook part may be employed for fastening a reel of thread to a dress.

[Printed, 8*d.* Drawing.]

A.D. 1865, April 29.—No. 1199.

HUDDART, GEORGE AUGUSTUS.—(*Provisional protection only.*)—" An improved manufacture of buttons." This invention relates to such buttons as are attached to garments " by " the simple application of pressure." The button consists of a shell composed of two discs which are connected by the upper overlapping the edge of the under one, of "a loose " stud," and of a hollow shank.

The under disc "is stamped with a hollow pierced boss " which forms a recess for the loose stud and the hollow end " of the shank." The stud is of sheet metal, circular in shape, and having the middle thrown up in the form "of a " hollow cone." The object of the stud is to ensure the expansion of the shank; it " takes the pressure of the inserted " end of the shank and causes its hollow end to spread under " the pressure applied to the button, and thus attach itself " firmly to the back piece."

[Printed, 4*d.* No Drawings.]

A.D. 1865, May 1.—No. 1222.

ALLENDER, JOSEPH FELIX, and CASHIN, THOMAS FREDERICK.—(*Provisional protection only.*)—" Improvements " in fasteners for driving bands, straps, belts, harness, or other " such like purposes." This fastener may be used for braces; it consists of a metallic plate "formed with lugs or ears, into " or between which is fixed a fluted eccentric roll." This roll turns freely in the lugs, and when it is so placed " that the " shortest radius of the eccentric is opposite the plate," the unattached end of the brace "can be passed beneath it;"

when the roll is turned "so that the radii become longer," it presses upon and secures the end "the more tightly the greater "the strain upon it."

Sometimes the fastener is made with "two or more rolls "working in one plate," and sometimes "a bar to slide in an "inclined slot in the lugs and act as a wedge" is substituted for the eccentric roll.

[Printed, 4*d*. No Drawings.]

A.D. 1865, May 9.—No. 1284.

HARTLEY, GEORGE.—"Improvements in fasteners for stays "or corsets or other articles of dress." The patentee describes three methods in which his invention may be carried out; two busks or stiffeners are used in each method.

1. "Three or more flat metallic tubular fastenings" are attached to the outer edge of one busk. The top and bottom fastenings have "a nick formed on, or a piece cut out of, the "under side." To the other busk are fixed as many "flattened "vertical hooks," the points of the top and bottom ones "being reversed or towards each other." The top hook "is "merely dropped into the tube, the head of the hook resting "on the edge of the nick." The bottom hook is secured "by bending the busk or stiffener and springing the hook "into the tube." In the middle fastening "part of the "under side of the tube is cut away, leaving a slot or space "which forms a horizontal hook." A flattened hook being fixed on the other busk, the two "readily drag into each "other."

2. The top and bottom tubes have a nick cut out of their side; the hooks "are cut flat and resemble in form the bolt of "an ordinary desk lock, their points being in an opposite "direction to those of the first example." The top hook "ascends into the tube;" the bottom one "springs down-"wards" into the bottom tube. The middle fastening is the same as before described.

3. The top and bottom tubes "have a groove or space "cut partially down their under side;" studs are fixed on the other busk; their heads "are let into the tubes," and are "concealed within the flat surfaces." The middle fastening is the same as before."

[*Printed*, 4*d*. No Drawings.]

A.D. 1865, May 10.—No. 1294.

HART, Herbert William.—"An improvement in buttons, and means of attaching the same." The button is composed of an upper plate, "filling-in pieces of metal, pasteboard, or other material," and an under plate carrying a shank which is "formed of two metal plates or wires unconnected at the outer ends."

To attach the button insert the shank through the fabric, pass a washer on to the shank ends, separate the ends, and "turn them down close on the washer." For the sake of neatness the ends when turned down should not extend beyond the edge of the washer.

For horn, hardened caoutchouc, and other similar buttons, "the body of the shank is inserted while the material is in a plastic state."

[Printed, 6*d*. Drawing.]

A.D. 1865, June 15.—No. 1615.

HELCMAN, Stanislaus.—(*Provisional protection only.*)—"An improved arrangement for fastening shirts, collars, and other articles of wearing apparel, by which the ordinary button or stud is dispensed with." The fastening consists of a button head with a straight hollow shank, "to the end of which are hinged two small arms, each having a small tab or lug entering the inside of the hollow shank." A spiral spring is fitted into the shank below the tabs or lugs "to maintain the arms in a vertical or horizontal position as may be desired."

[Printed, 4*d*. No Drawings.]

A.D. 1865, June 15.—No. 1616.

HELCMAN, Stanislaus.—(*Provisional protection only.*)—"An improved description of stud for fastening shirts, cuffs, waistcoats, and other articles of wearing apparel." The stud consists of two separate parts, a front and a back. The front part is a plain or ornamented head with a small hollow shank which carries two lugs at the outer end and a spiral spring inside. The back part is a plate "with a hollow spiral shank having an internal slotted tube."

To unite the parts, the shank of the back plate (after being passed through the button hole from behind) has the shank of the front part thrust into it. "By using a slight pressure, " at the same time turning the front part to the right, the " stud is secured." The reverse of this action loosens the parts.

[Printed, 4*d*. No Drawings.]

A.D. 1865, July 5.—No. 1779.

EMANUEL, HARRY.—"A new manufacture of or improve-" ment in ornaments for personal wear." The patentee claims the manufacture of such ornaments "by the employment of " plumage or feathers of birds." He makes a setting frame, back, or mounting in gold, silver, or other metal or rigid material, and affixes thereto with shell lac or other adhesive substance, "feathers or plumage of birds, preferring those " which are celebrated for their varied effects of colour and " light." Or he cements such plumage to a framework of cardboard or the like and cements, rivets, or otherwise attaches the framework to a mounting of gold or other metal. The whole may be ornamented with gems, &c.

[Printed, 4*d*. No Drawings.]

A.D. 1865, July 7.—No. 1794.

BÉZIEL, PIERRE MATHURIN CHARLES.—"Improvements in " the manufacture of chains, bracelets, necklaces, and other " articles of jewelry." The "chief feature" of this invention consists in forming by pressure in dies "links, leaves, or other " models" suitable for manufacture into the above-named ornaments.

A design is engraved "in two hollow dies or moulds corre-" sponding one with the other;" the design must be of such a nature "as will admit of the piece or link formed in the moulds " being readily and elegantly joined by solder or otherwise to " a similar piece." A sheet of copper is placed between two sheets of gold; the three sheets are laid between the dies; gradual pressure is applied; the piece which is thus formed is withdrawn; the rough edge is smoothed down; and when the article to be made from the pieces is completed, it is "subjected "to a nitric acid bath, which dissolves out the copper, leaving "the gold intact."

Sometimes it is desirable "to have a half design, which the patentee defines as "one uncompleted by its fellow." He then uses one sheet of gold and one of copper, treating them as before, "except that one die only is sunk."

"For a particular class of ornament," the patentee uses copper wire covered with gold leaf instead of a sheet of copper. The wire may be either retained in its casing of gold or dissolved out by nitric acid.

Many examples of ornamental jewellery made from the foregoing links and leaves are illustrated in the annexed sheet of drawings; and these, says the patentee, "give but a faint idea "of what can be done in this novel system of manufacture, as "the designs can vary to infinity." The modes of coupling, connecting, or joining the several parts "must of necessity "vary to suit the several designs."

[Printed, 8*d*. Drawing.]

A.D. 1865, July 25.—No. 1930.

WRIGHT, HENRY.—(*Provisional protection only.*)—"An "improved shank for buttons, studs, and solitaires." This shank is shaped somewhat like the letter S, "thereby doing "away with the necessity of sewing the button on to the "garment." An eyelet hole is required where the button would ordinarily be sewn on, and another eyelet hole at the place where the buttonhole would otherwise be. The button is fixed by passing the shank through the one hole "until the "garment enters the top half of the shank," leaving a hook at the back to take into the other hole.

[Printed, 4*d*. No Drawings.]

A.D. 1865, August 9.—No. 2066.

ASTON, WILLIAM.—(*Provisional protection only.*)—"Im-"provements in the manufacture of linen buttons." The improvements are intended to thicken and support the buttons so that they may not be injured by mangling or other pressure.

The button is made with two metal shells, each pierced with a central hole, and having a concentric raised flange round the hole. When the shells are placed together, the flanges are in close connection with each other; the flange of the front shell spreads "radially over the inner edge of the back shell," and "the front edge of the concentric flange of the back shell rests "against the inside of the front shell." The covering is effected with the ordinary press tools and appliances.

[Printed, 4*d*. No Drawings.]

A.D. 1865, August 10.—No. 2079.

NEWTON, William Edward. — (*A communication from James Louis Harlem, and Theodore Luzerne Payne.*)— "Improvements in machines for making eyelets." Two principal cams, from which are derived the motions for forming the eyelets, are mounted on the main shaft. A strip of metal of sufficient width to allow a planchet to be cut from it is fed forward between rollers, which are put in motion "for "a limited time during each revolution of the main shaft" by a wheel, upon whose periphery there are only so many teeth as with reference to the number of teeth in a gear wheel and bevelled wheels will carry the strip forward the requisite distance. As the rollers are "subjected to a considerable strain," the upper part of their axles passes through a cross frame, and the parts above the frame gear into each other. In front of the main shaft and parallel with it, are arranged "a compound "die and female cutter, and a compound male cutter and "former;" the latter consists of a central cutter or punch, a surrounding former, and an external surrounding cutter; the first of a female cutter or die, and a second female cutter.

The strip having been carried far enough "to cover the first "opening in the die, one of the cams acting upon a lever "moves forward a sleeve which has an end bearing against "the flange of the male cutter," and "carries it against the "strip of metal, and continuing on acts in combination with "the female cutter to cut out a planchet." The other cam now acts on a lever which moves forward a spindle. This movement causes the former with the punch (which is sheathed within it) "to act against the planchet, and shapes the same in "combination with the die into the form of a cup." While this is going on, the lever worked by the first cam is acted on by a spring, and carries the sleeve and the cutter back to their first position. The punch "forces the cup into a deeper recess "*in* the die, at the bottom of which is the female die, through "which the end of the punch passes and cuts out the top of "the cup." The eyelet is now finished, a flange having been turned upon its edge "by the action of the end of the former "in combination with the interior die." The second cam "now permits the former with the eyelet upon it to fly back "within the cutter as a sheath, whereby the eyelet is instantly "stripped off;" and a wheel (on the main shaft) having a part of its surface cut away, permits a shield (which rides upon it) "to fall and cover the mouth of the die," in order to prevent the eyelet "from being shot into the cavity of the die."

The inventors also describe "a further improvement in the "general construction and arrangement of the machinery, together with certain improved appliances for aiding to carry "into effect the principle or mode of operation above described." In this arrangement they claim (1) the use of reels or their equivalent "for delivering and taking up the metal strip as it "is used;" (2) the use of "sliding clamp jaws in combination "with suitable instruments" for forming eyelets from a strip of metal; (3) "mechanism for clipping the perforated portion "from the strip;" (4) "a clearing punch" to prevent the eyelet from remaining in the cavity of the die; (5) "a delicate "finger or clearer" to prevent the eyelet from adhering to the end of the punch.

The strip is drawn from one reel at intervals by the feeding mechanism, and after it has been operated upon to form the eyelet, the residue passes over a guide roller, and is wound on another reel at the opposite side of the machine.

The sliding clamp jaws constitute the feeding mechanism between which the strip passes.

In the use of a strip "of sufficient width to form more than "one row of punchings," a considerable saving of material may be made "by punching the second time midway between "the perforation of the first punching, and to one side thereof;" but to do this, it is necessary "first to trim off so much "of the width of the strip from the already perforated edge, as "will permit the cutter to penetrate the strip at the proper "distance from its edge." This is effected "with greater "accuracy and precision during the passage of the strip "through the machine" by means of a clipping mechanism consisting of a shearing chisel and a corresponding shearing edge.

The clearing punch "is placed at the rear of the die," and is thrust through it.

The clearer "has a movement across the axis of the punch, " directly in front of the same," after the punch is drawn into its sheath.

[Printed, 1*s*. 6*d*. Drawings.]

A.D. 1865, August 15.—No. 2103.

LILLY, Reuben Cornelius, and SUNDERLAND, James.— —"Improvements in fastenings for sleeve links, solitaires, " brooches, and other articles of jewellery." The back of the link, &c. is a disc of metal soldered to the front and forming therewith a case; it is either flat or slightly raised and on each side or end stamped with two lugs and pierced with a hole. A pin is hinged to two of the lugs and notched at the free end to form a catch. "A hollow stamping" which acts as a " swivel snap" is hinged to the opposite lugs. A piece of flat spring is passed into the case through one of the holes and out through the other hole; one end presses against the snap, keeping it engaged with the catch; the other end presses against the pin near the hinge, so that when the catch is disengaged from the snap, the spring forces the pin "upwards " clear of the swivel snap." The fastening is closed by pressing the pin down on the top of the snap, and is loosened by pressing the snap inwards.

[Printed, 6*d*. Drawing.]

A.D. 1865, August 19.—No. 2146.

EDKINS, Charles, NEWMAN, James, and GREAVES, Thomas.—(*Provisional protection only.*)—"Improvements " in the manufacture of buttons." The upper part of the shank is "of a spherical form" and is enclosed in the front shell or back shell (separately or combined) in such manner that the body of the button can revolve on the ball or can be depressed on one side and raised on the other for the convenience of fastening or unfastening. The ball forms with the body "what may be termed a ball-and-socket joint."

[Printed, 4*d*. No Drawings.]

A.D. 1865, August 28.—No. 2207.

BONNEVILLE, Henri Adrien.—(*A communication from Charles Doudet.*)—(*Provisional protection only.*)— "Im-

" provements in apparatus for raising and holding the skirts " of ladies' dresses." This apparatus is to be used for holding the tapes or cords which gather up the skirts of ladies' dresses.

It consists of a chain connected at one end to a hook (which is inserted into the waistband of the dress) and at the other to a swivel, whereto "the ends of the tapes or cord connected or " not with a ring are attached." Links or rings of sufficient size to pass over the hook are placed " at equal distances along " the lower end" of the chain.

One such chain "being placed at each side of the waist," and " corresponding rings being placed on the hooks," the skirt " will be equally raised all round."

[Printed, 4*d*. No Drawings.]

A.D. 1865, August 29.—No. 2224.

WHITE, George Frederick, and CHAMBERLAIN, Harvey.—"Improvements in apparatus for elongating and contracting " waist and other belts, which apparatus is also applicable for " other purposes." The patentees apply their invention to glove fastenings, waist belts, tabs, waist fastenings of vests and trousers, surgical bandages, book clasps, driving belts, and connecting bars.

A circular disc formed with a "volute groove" is mounted on a central pin on which it rotates. This pin may be "on " one end of the parts to be drawn closer or thrust asunder," or "on an independent piece," and the disc may be arranged " to operate on and intermediate of the two parts." The groove "receives a pin of the part to be contracted or drawn " closer by the disc." The periphery of the disc is milled or roughened "to afford grip to turn it."

The required expansion or contraction is effected by rotating the disc in one direction or the other.

"The extent and rate of the motion will be multiplied two- " fold" by forming two volute grooves in a disc, whose axle is mounted on a piece intermediate of the parts to be operated on.

The patentees describe their invention as applied to a book clasp, a glove, a driving belt, and a connecting bar or rod.

[Printed, 8*d*. Drawing.]

A.D. 1865, August 30.—No. 2230.

ANDERSON, CHARLES FRANCIS, and **DURANT**, DAVID.—(*Provision protection only.*)—" Improvements in apparatus " applied to pockets to ensure the safety of their contents." A hinged metal or other suitable frame, similar to the clasp frame of leather bags, but modified " to suit the purpose of the " pocket," is fixed in the opening of the pocket. The spring catch " may be disposed in any suitable position ; " it is preferred to place it " at the end or on the rounded shoulder of " the frame." The frame is provided with a spring, which has a tendency to throw the frame wide open.

The frame for a watchpocket is cut with " a slot or longitudinal opening along the top," so that " the chain or pendant " of the catch may pass or project out of the pocket."

[Printed, 4*d*. No Drawings.]

A.D. 1865, September 12.—No. 2334.

WELCH, JOSEPH.—(*Provisional protection only.*)—" Improvements in the manufacture of swivels." The body of the swivel is made in two halves, and the ends of the stems of the rings are riveted in before the halves are connected. " After " the formation of heads on the stems," the halves are soldered, brazed, or otherwise united. The advantage gained is that " good heads can be readily made on the ends of the stems by " percussion or pressure."

" The end pieces of the swivel carrying the rings " are short rods or stems pressed or stamped in dies and having the rings soldered or brazed on to them. Or the stem and ring may be in one piece.

[Printed, 4*d*. No Drawings.]

A.D. 1865, September 28.—No. 2497.

GIULIANO, CARLO.—(*Provisional protection only.*)—" Improvements in the manufacture of chains, bracelets, necklaces, and other analogous articles." These articles are formed of a combination of " two semicubular or trough-" shaped " bands of metal ; these when wound round a mandrel " interlock and form a flexible or elastic structure capable " of bearing considerable tensile strain."

The bands are drawn or otherwise formed of a trough-like shape having projecting vertical edges. One band with its edges projecting upwards is wound round a mandrel so as to produce a helical coil. A band with its edges projecting downwards is then wound on "so as to insert the projecting " edges of one coil in the trough of the other."

"As the tensile strain on the structure will be longitudinal " and consequently across the troughs," the projecting edges of the bands will be drawn against each other, thereby giving both elasticity and strength to the article.

[Printed, 4*d*. Woodcuts.]

A.D. 1865, October 9.—No. 2599.

MILES, THOMAS.—(*Provisional protection only.*)—"Im" provements in the manufacture of scent and smelling " bottles." This invention is "chiefly applicable to union " bottles"; it may however be applied to the ordinary single scent bottles. The improvements consist in the "application " to the opening caps of the stoppers of a receptacle for the " purpose of containing the movements and dial of a watch, " or a locket, or for containing lozenges or a sponge saturated " with aromatic vinegar."

The caps are extended and enlarged "by the application of " cases similar to those containing the works and dial of a " watch"; they have hinged spring lids which fly open upon pressure on the catch. The watch case "is attached to the " stopper by means of a male and female screw, in order that " when removed it may expose the winding-up and time adjust" ing shaft heads." The entire cap "opens in the usual manner " to expose the stopper by a projection pressed in by the " thumb or finger." In union bottles the case at the other end "unscrews in one entire piece from the metallic male " screw attached to the neck"; the cap of the lozenge or vinaigrette case "opens by a spring or it may be fastened by a " screw."

The caps are made by preference "of a convex surface"; one or both however may be "of a flat or flush surface" in order that the bottle may be placed upright on a table.

[Printed, 4*d*. No Drawings.]

A.D. 1865, October 16.—No. 2665.

READING, John, **READING**, Samuel Alfred, **READING**, George Edward, and **READING**, Frederick Francis.—"Improved methods of manufacturing or arranging the "spring bolts and attendant parts of sleeve links and other "like articles where the means of a portable connection are "required." The patentees claim the following improvements on a portion of the invention for which the above-mentioned John Reading obtained Letters Patent dated March 1st, 1856, No. 528.

First; instead of soldering a piece of metal to the spring bolt to form the catch, they raise upon and out of the spring bolt a catch by means of press tools and dies. This catch is arranged to engage with the snap or hook of the bar or link, so that "the point of the hook, bar, or link" may not protrude through the spring bolt "beyond the thickness of the metal "of the case in which the said bolt works."

Second; instead of soldering a catch to the spring bolt of a scarf ring or similar article and soldering a shield to the thumb-bit of the spring bolt by which it is actuated, they form these two parts by press tools and dies in the following manner:—"The end of the spring bolt being turned back, a portion of "the metal is compressed double and close so as form a con-"venient thumb-bit as well as a shield, and the remaining "portion lies back upon the case from the thum-bit and covers "the slot made in the top end of the case in which the spring "bolt works." The catch is not raised or pressed out of the spring bolt, "but is separately cut out and then riveted into "and through both the spring bolt and that portion of the "same which has been bent back to cover the slot in the "case."

[Printed, 8*d*. Drawing.]

A.D. 1865, October 25.—No. 2753.

HUDDART, George Augustus.—"Improvements in buttons "and in attaching buttons to garments or fabrics." The first improvement relates to the manufacture of a button which can be fastened to a garment by pressure "without marking "the face of the button;" the second to a mode of attaching this class of button to a garment, "whereby the tendency of "the button to tear the fabric will be avoided."

1. The shell of the button consists of two pieces of sheet metal; the upper overlaps the under one, and the upper one is covered with a disc of cloth whose edge is lapped in between the two pieces. The lower piece "is stamped with a central "hollow pierced boss" which forms a recess for a loose stud. This stud is stamped out of thick sheet metal, and the stamping press "while stamping out a disc throws up the centre "in the form of a hollow cone." The shank is of soft brass or copper hollow and with a head "that will serve to nip the "cloth between it and the shell."

The stem of the shank is passed through the cloth and into the boss; the apex of the cone entering the hollow of the shank causes (with moderate pressure) that end of the shank to expand within the shell.

2. An eyelet is attached to the fabric at the spot where the button is to be fixed, and the stem of the shank is passed through it.

Some buttons have shanks "in one piece with the button." When the shank is passed through the eyelet, a head is formed on its outer end "by pressing the end of the shank into a "hollow mould."

In pearl buttons the shank passes through the pearl "and is "formed with a retaining head."

[Printed, 6*d*. Drawing.]

A.D. 1865, October 31.—No. 2802.

CASHIN, THOMAS FREDERICK and ALLENDER, JOSEPH FELIX.—"Improvements in fasteners for driving bands, straps, "belts, harness, or other such like purposes." Two constructions of fastener are described, either of which may be used for belts and braces.

In the first, the fastener consists of a frame formed by a bottom plate having lugs at right angles thereto and of a roller "with journals smaller in size let into the lugs." The upper surface of the plate and that portion of the surface of the roller which acts upon the belt are serrated or indented. As the journals are smaller than the roller "and flush at one portion "of the circumference," they cause the roller "to act as an "eccentric." When the plate is fixed to one end of the belt, the roller is turned "with the short radius towards the plate;" the free end of the belt is passed between the plate and the roller, and the roller is then turned "so that the throw or "long radius presses upon and secures it."

In the second, "a roll or bar to slide in inclined slots in the "lugs" is substituted for the eccentric roller. If a buckle is made with a bar, the bar "is acted upon by friction," and "the strain causes it to bite like a wedge."

In ladies' belts the rollers "may be flush with or below the "surface" of the frame.

[Printed, 10*d*. Drawing.]

A.D. 1865, November 27.—No. 3042.

LAKE, WILLIAM ROBERT.—(*A communication from William Barney Watkins.*)—"An improved composition for enamel, "paint, varnish, cement, or plaster." Buttons may be made of this composition or be coated with it. The composition consists of about equal quantities by weight of fine white marble and an alkaline silicate, "the silicate being about 25 to "30 degrees Baumé;" they are mixed together until about "the consistency of thick cream" and are then ground together; they may be heated when mixed, but it is preferred "to use them without heat." Colour is given by the addition of "earthy and metallic colors." The button, whether made of the composition or coated therewith, is submitted to a heat not exceeding 300° Fahr., and after the heating is coated with a silicate varnish or "any of the well-known resinous or oil "varnishes."

The silicate varnish is made from "the same silicious "silicate" as is used for the composition for paints (2 parts by weight of the silicate to 1 part of marble, "the silicate "being of specific gravity about 20 degrees"), and from 5 to 10 per cent. of marble in powder; the ingredients are heated until a thick scum rises on the surface; the mixture is allowed to settle, and when it becomes clear it is ready for use over white colours. For other colours "from 2 to 3 per cent. "of a white oxide of zinc" is used "instead of the carbonate "of lime or the marble."

[Printed, 4*d*. No Drawings.]

A.D. 1865, November 30.—No. 3076.

HOLLANDS, John, HOLLANDS, Edward Richard, and HOLLANDS, Thomas.—"Improvements in the manufacture "of gold and other ornamental chains." This invention refers more especially to the description of chain known as the "Brazilian chain;" the improvements consist in making the chain without soldering, the annular links which appear in the finished chain being laid one on the other and connected "solely by means of internal catches."

The outer link is made from a blank of circular or other shape; the edges are raised at right angles; it is perforated "around the centre with three or other convenient number of "holes," in which state (if circular) it somewhat resembles "a wheel with spokes and tyre;" and "an undulating form" is given to it "at a separate operation or otherwise." The inner link (which does not appear on the surface of the chain) has as many arms as there are perforations in the outer link; the arms radiate from a common centre, and their outer ends are formed with enlargements or heads; it is dished or bent so that "the arms at their outer ends become nearly parallel the "one to the other."

Process of manufacture:—An outer (or wheel) link is laid "on the entrance of a conical hole which is too small to allow "it to pass through freely." Another similar link is laid on, and the arms of an inner link are passed through the holes in the two. A punch descending on to the upper wheel link forces the lower one into the conical hole "so far as to reduce "considerably its external size." The pressure thus applied "contracts the holes through which the arms of the inner link "are passed," and the two wheel links are locked together, as the heads on the ends of the arms are "no longer able to pass "through the holes." A third wheel link is put on over the second; the arms of another inner link are passed through the holes in the second and third wheel links, and these are fastened together by the action of the punch. The chain passes out at the lower end of the conical hole.

When the chain is made of gold, "it is better to anneal the "links after they have been raised." In chains of large size, "the connecting arms may be formed of the metal displaced "in perforating the wheel links."

In the annexed sheet of drawings are shown representations of the tools which the patentees prefer to use in making the links and chains.

[Printed, 10*d*. Drawing.]

A.D. 1865, December 2.—No. 3096.

MORIN, Emile, and **SCHWEIZER,** Roman.—(*Provisional protection only.*)—"A new or improved swivel snap." This snap consists of two arms hinged together. The shorter portions of the arms are of "a semi-oval form," so that when they are closed an oval ring is formed; on the extremity of one there is a projection, and in the other a corresponding recess; when closed the projection enters the recess and strengthens the fastening. The longer portions of the arms are of sufficient length "to exercise a compressing power or action upon the " closed oval ring" by means of a spring fixed between them. Beyond the spring the arms are formed, the one with a slot, and the other "with a central arm which passes through the " slot," both parts being bent inwards to an angle of about 45° for the purpose. The arms "then terminate in the form " of two rings, one above the other, for a swivel spring hook " or chain to be passed through."

[Printed, 4*d*. No Drawings.]

A.D. 1865, December 6.—No. 3132.

WALKER, Joseph.—(*Provisional protection only.*)—"Improvements in fastenings for waistband buckles, applicable " also for other similar purposes." Instead of attaching one end of the band permanently to the buckle, both ends are free " being threaded through two bars affixed to the back of the " frame of the buckle." An oblong or other shaped aperture is made in the frame; a piece of metal "which a little more " than covers the said aperture" is placed in front of the frame; and two bars on the back of the piece "come against " the other two bars."

When the two ends of the band are adjusted to their proper positions, the piece "is pressed inwards," and the band "is " held securely between the bars.'

[Printed, 4*d*. No Drawings.]

A.D. 1865, December 8.—No. 3160.

DAHIS, Florian.—"An improvement in buttons and studs "for fastening garments." The button or stud consists of two separate parts. The head has a hole in the middle and a spring occupying a recess in one side; the recess extends into the hole. The other part is a disc carrying a "perforating "point" in the side of which is a notch. The perforator is pressed through the fabric; the head is placed thereon, and the spring taking into the notch holds the parts together. To separate the parts the head is turned until the spring comes "upon one of the smooth sides of the perforator."

The disc may be serrated round its outer edge so as to enter the fabric and prevent it from turning round. The spring may be placed in a recess "between two plates forming the "head;" it may be triangular or elliptical in shape, or in the form of a fork so as to take into both sides of the perforator. In the latter case a hole is required for the insertion of a pointed instrument "to pry the springs apart and disconnect "them from the neck of the perforator."

[Printed, 8*d*. Drawing.]

A.D. 1865, December 8.—No. 3164.

BOUSFIELD, George Tomlinson. — (*A communication from Frederic Ingersoll Palmer.*)—"Improvements in buttons and in the method of attaching buttons and ornaments "to garments and other articles." Openings are punched in the back plate or collet of the button, and the portions between the openings "are bent up" forming springs and leaving a central hole. The shank is shaped with a broad head at one end and with a shoulder near the other end, "from "which it slopes to a point."

To attach this button to a garment a hole is made in the fabric; the point, shoulder, and stem of the shank are thrust through the hole; the buttonhead is placed on the point of the shank; and pressure is applied to force the springs over the shoulder. The springs close down round the shoulder, and a strain on the button draws them more tightly still.

"To make the button removable" the shank is made with notches (instead of a shoulder) into which the springs will enter when the shank is forced into place. "By turning the

" button on the shank so as to bring the full portion of the " shank opposite to the openings between the springs the " button can be instantly removed."

[Printed, 8*d*. Drawings.]

A.D. 1865, December 20.—No. 3298.

NEWTON, HENRY EDWARD.—(*A communication from Marie Louise Changeur.*)—"An improved kind of clasp or dress " preserver to prevent ladies' dresses from trailing along the " ground." "Brooches, either straight or bent, arranged " vertically or horizontally," unite in one or many points the several folds of the dress.

The brooch which holds up the dress is attached by a chain or cord to another brooch or to a hook "which fastens it to " the girdle or belt." Two sets, one on each side of the dress will generally be found sufficient. In order to hide the pin-point of the brooch and thereby prevent it from catching and tearing any light material that is worn, "a small box is used, " as in the case of the safety pins, instead of the ordinary " catch." The pin is formed with a ring in the middle for attachment to the chain or cord.

If the material of the dress is likely to be injured by the pin, rings can be placed at intervals round the dress, the lower brooch may be dispensed with, "and small chains with hooks " may be used instead."

[Printed, 6*d*. Drawing.]

A.D. 1865, December 23.—No. 3325.

NEWTON, WILLIAM EDWARD.—(*A communication from Henry Wurtz.*)—"Improvements in the preparation of glue " or gelatine so as to render it insoluble in water and applicable by the admixture of other substances to various " purposes for which common glue or gelatine cannot now be " used." The glue or gelatine is treated chemically in such manner that without being deprived of "its gelatinizing " power" it will become in the process of drying converted into a substance insoluble in water. This change is effected by heating it "in the form of a strong solution in water " together with a strong solution of chromic acid or of an " alkaline bichromate." Before the bichromate [is added to the gelatinous solution, "the characters of the final product "may be greatly and variously modified by the admixture "with the glue of various substances, according to the pur-"pose for which the preparation is to be used," and according as increased weight, hardness, strength, toughness, or colour is required.

The new material is adaptable "to nearly every use to "which the hard vulcanized rubber compounds, horn, ivory, "bone, shell, papier maché have been applied."

"Buttons" may be made from it. "The jelly is cast into "the form of an elongated cylinder, which is rolled in tissue "paper and then enclosed in a cylindrical sausage-shape net-"work bag;" it is hung up to dry, and when dry, buttons are made from it by turning or otherwise.

"Cheap jewellery" is mentioned among the uses to which the new material is applicable:—"A marbled mixture of a "light-colored and a dark-colored glue thus modified" resembles real tortoiseshell; "green verditer" used as a colouring agent gives "a variously shaded product presenting a "remarkable imitation of green malachite."

[Printed, 6*d*. No Drawings.]

1866.

A.D. 1866, January 13.—No. 123.

GOTTHEIMER, HENRY.—"Improvements in protectors for "watches, portemonnaies, and pocket books." A short length of india-rubber is secured at each end to a socket, and to each socket is secured a cap carrying a ring. The rubber may be either solid or tubular; if tubular it may be strengthened by the insertion of a coiled spring fixed at each end to the sockets. To one ring is attached a hook "having a short point" and made with "a double turn" at the curve of the shank "to act "as a stop;" or the wire of which the hook is made "may be "twisted to form a screw;" or "a small disc may be soldered "to it." The hook is to be passed "through the bottom of "the pocket;" if it is made with a screw, "the point of the "screw is to be stuck through the lining on the inside of the

" pocket," and a button is to be screwed on to the point "on " the outside" of the pocket. To the other ring is attached a swivel " to which the watch bow is attached." The wearer " removes his watch against the action of the india-rubber " spring and not by the chain."

"For the more effectual securing of the watch" the patentee proposes to use a hollow metal ring to be put round the neck of the watch, and a short chain to be connected to the ring and to the swivel. The ring consists of two unequal parts hinged together; the larger part contains a coiled spring which forces a slide into the smaller part. The slide is drawn back by means of a knob thereon which moves in a slot.

To protect pocket books, &c. the swivel is secured to the customary elastic band which surrounds the book, or it has attached to it an elastic band which is to be passed round the book.

The tube and the hook are susceptible of modifications.

[Printed, *8d.* Drawing.]

A.D. 1866, January 17.—No. 153.

ALLIES, MATTHEW.—" An improved holder or fastener for " shirt studs, brooches, and other personal ornaments." This holder is made of any required size and shape, "with a pre- " ference for the whole oblong form rounded or pointed at " the ends." The shank may be "flat or grooved, hollow or " solid;" one end is fixed "to the centre or any other part " underneath of the stud, brooch, or other personal orna- " ment;" the other end is secured "to the width placed " lengthwise in the centre and flush with the edge or one end " of the holder."

The directions given for using this holder are, " take hold " of the stud with the thumb, fore and middle fingers, the " latter over the free end of the holder, which insert in the " hole; then with the left-hand forefinger placed underneath " lift up the edge of the hole over the end of the holder under " the thumb, pressing the latter down; then turn the stud " one-quarter round the free end of the holder upwards;" the flat or grooved sides of the shank are then "parallel to the " sides of the hole, keeping it in its place."

The shank and holder "may be made as one," and "be " adapted to existing studs, brooches," &c.; when used with brooches, "a shield is required, upon which elastic is stretched "to form the eyelet or hole."

[Printed, 8*d*. Drawings.]

A.D. 1866, January 20.—No. 187.

MCCLENAHAN, JAMES.—"Improvements in studs and buttons." On the outer end of the stud-neck or button-shank there is formed or fixed "a fastening piece in the form of a "screw consisting of, say, one turn more or less;" it is "a "broad leaf screw, and of a diameter, say, as large as the stud "or button." This stud or button is secured to any garment by simply passing the point of the screw through a slit or buttonhole and turning it round.

The stud or button may be made with an intermediate disc on the neck or shank; this arrangement is preferable for buttons, as it "leaves the button-head free for buttoning on the "other part of the garment."

[Printed, 6*d*. Drawing.]

A.D. 1866, January 24.—No. 244.

PHILLIPS, LODNER DARREVONTIS.—"A machine for making "buttons from plastic materials, grinding, polishing, and "carding the same, parts of which can be used in grinding, "polishing, and carding other kinds of buttons." In the machine first described the shank is made and inserted while the body of the button is being moulded. The frame carrying the working parts is supported on a table slotted for the passage of part of an upright lever, which is acted on by means of a stirrup. To the upper end of the lever a cross bar is connected by its bearing which moves in an "angular slot," and below the fulcrum another cross bar is connected to it, its bearing working in an "inclined slot." The mechanism which forms and inserts the shank is jointed to the outer end of the upper cross bar, and the standard supporting the mould that forms the body is jointed to the outer end of the lower.

The forming and inserting mechanism consists of (1) a vertical rod; (2) two vertical jaws pivoted to the lower part of the rod; (3) a former; (4) a thin slotted plate which passes down over the wire to steady it and keep it in position over the former. The jaws "are cut out at their lower ends on their "inside faces" to allow them when brought together "to "pass over and around the former." At the same time that the jaws bend the wire over the former, one of them "cuts off "the wire the proper length" for the shank. As the rod still further descends, a projection on one jaw comes into contact with an inclined piece on an "oscillating plate" between the mechanism that forms the shank and that which bears the mould, and a similar projection on the other jaw comes into contact with a projection on the machine; the jaws are thus forced together and bend and form the shank. The wire is fed in between rollers to which motion is given by mechanism in gear with the upper cross bar and fully explained in the Specification. The plate is pierced with an opening just large enough to admit the lower ends of the jaws "and help "form the under surface of the button;" a portion of its under side "forms a part of the mould."

The same movement of the lever depresses the outer end of the upper cross bar and raises that of the lower one; consequently as the shank is being formed, the standard carrying the mould full of plastic material is rising towards the under side of the plate. When each has reached its limit, the shank is inserted, and any excess of material is cut off by the edges of the mould. When the parts recede, the complete button is left suspended by its shank on the former, from which it is removed by the partial rotation of the plate. The mechanism for rotating the plate is described. The machine may be arranged "to make a number of buttons at one and the same "time."

The buttons are now conveyed to a "grinding and polishing "machine" consisting of two or more horizontal wheels; a serpentine trough or conductor "over and passing across the "upper surface" of the wheels; and moveable covers "which "rest upon the eyes of the buttons and by their weight keep "the buttons constantly in close contact with the revolving "wheels." The wheels (or one of them) are covered with emery or other suitable material; the last one may be covered with leather for polishing. The trough is somewhat wider than the diameter of the button and in height a little less than the depth of the button including the shank.

The buttons after the grinding and polishing "are ready to "be fixed upon cards." Standards rising from a frame support two hinged frames, a perforated plate, and a moveable plate to which fingers or punches are fixed. One of the hinged frames carries "triangular projections" on its under side. The card whereon the buttons are to be fastened is perforated suitably to receive the shanks, and near to and on a line with each perforation a tongue "is partially cut out, being left "attached to the card only by its end nearest the perforation." The card thus prepared is laid on the perforated plate, the perforations and tongues being placed directly over the openings therein; the plate with the projections is turned down on the card, forcing the tongues through the openings and bending them into position; the frame is lifted up; the shanks are inserted through the perforations; the other frame is brought down to hold the buttons in place; and the moveable plate being pushed forward by a lever, the fingers force the tongues through the eyes of the shanks.

[Printed, 1s. 8*d*. Drawings.]

A.D. 1866, January 31.—No. 300.

LAKE, WILLIAM ROBERT.—(*A communication from Frank Marquard.*)—"Improvements in working and treating india- "rubber, gutta percha, and other similar gums." The inventor bleaches and hardens india-rubber, &c. for the purpose of making articles therefrom in imitation of ivory, pearl, coral, enamel, porcelain, &c.

He dissolves about 2 lbs. of pure india-rubber or other similar gum in about 32 lbs. of chloroform. He charges the solution "with a strong caustic ammonia gas" or with "a "preparation of chloride of ammonia," preferring the former. When the gum is thoroughly bleached thereby, he puts the solution into a vessel having an agitator in it, and entirely frees the gum from the bleaching agent by "a washing process "with hot water," the agitator being kept in constant motion. Whilst this process is going on, the heat in the vessel may be raised to about 176° Fahr., "to evaporate the chloroform "from the gum;" this of course may be done by a subsequent process, the object being "to free the gum from the chloro- "form at this stage of the process." The product is now "in "the form of a froth, which is strained or collected from the "solution and then pressed and dried." He then redissolves it in a small quantity of chloroform to the consistency of a thick paste and mixes with it "finely prepared pure phosphate "of lime or carbonate of zinc, in such proportions as to give "a body to it." The compound has now the appearance of "slightly dampened meal," and in this condition it is subjected to pressure in hot moulds "to give coherence to it and "expel any excess of chloroform."

The compound after coming from the mould may be put into the lathe or other mechanism to be shaped "into all "manner of forms and devices." Coloured dry pigments may be introduced at the same time as the phosphate of lime.

[Printed, 4*d.* No Drawings.]

A.D. 1866, February 1.—No. 313.

JONES, George David.—(*Provisional protection only.*)—"A new and improved construction of pocket for male or "female attire, whereby the property contained therein is "rendered secure from theft or accidental loss." The pocket may be made of any textile or other fabric and of as many thicknesses as may be deemed necessary, or of metallic or other netting. The safety portion is to be "within the outer "covering" and to be protected at the opening by a flap or other contrivance. Beneath or around this part a spring is to be applied "of such form and material as may be best adapted "to the fabric of which the pocket shall be made."

[Printed, 6*d.* Drawing.]

A.D. 1866, February 1.—No. 317.

JENKS, Thomas.—"A new or improved method of manu-"facturing those kinds of ornamental metallic chains known "as 'Brazilian' or 'Snake' and other like patterns, and in "machinery or apparatus to be employed therefor." The patentee does not make "any specific claim for the machinery "or apparatus" which he employs. He makes his chains without soldering from links cut from flat metal and afterwards caused to assume "a cylindrical or tubular form." The pattern of the chain is determined "by the particular pattern or shape "of the metal blank employed." An "important feature" in the invention is that the arms of each link which secure the several links together "are inside the body of the links."

A strip of metal is fed "under a press by which the form "of the blank is determined." The annexed sheet of drawings shows the different shapes which the blank is caused to assume before it becomes a link; in the first stage it has a central disc, four-sided with the corners rounded, two short square arms, each pierced with a hole, and two long arms "formed "of a pear shape" at their outer ends; the pairs of arms are opposite each other. This blank is "forced into a short tube "where the blanks become stacked." The tube is open at the bottom and is placed in such manner "over a horizontal "grooved surface" that there is only sufficient space underneath the tube for the lowest blank "to be pushed away by a "feeder." The lowest blank is forced along the groove until it arrives at a bed which is formed in an oscillating die. This bed has in its centre an aperture corresponding exactly "with "the diameter of the chain to be made." A punch, having a second punch within it, "dishes the blank," and the inside punch "cuts out a certain part of the middle of the blank." A movement of the die brings the blank (now half-formed into a link) "over a deeper aperture or chamber circular in shape." Another punch "completes the outside of the link by forcing "downwards four other projecting parts in the blank caused "by the punching out of a certain part of the middle." The link is now tubular in shape and is in a chamber below the oscillating die. In the sides of this chamber are "four closing "fingers which are so actuated that two of them close into "the inside of the link (downwards)." A second fall of the punch "turns the two long arms of the blank downwards" into the middle of the link, and by the same action "forces "the link itself into a spring holder which is at the end of an "arm working in a groove below the last-mentioned chamber." The second pair of fingers cause the square arms of the link "to assume a horizontal position across the top of the link." The spring holder carrying the link becomes free from the chamber; and by the downward action of a piston rod (or other mechanism) the arm (connected to the spring holder) "is caused to make a half circular movement and to deposit "the link in an inverted position upon the last preceding "link of the chain, where it is held whilst a tube which holds "the completed part of the chain is moved upwards, by which "action the two long arms of the preceding link are forced

" through two holes of corresponding shape and size which " have been previously pierced in the square arms of the new " link." The spring holder returns to its former position, " and a plunger then comes down and completes the new link " by turning the ends of the long arms downwards into the " centre of the chain."

The blank may be punched out in the first instance so that the short arms are left "projecting towards the centre of the " blank instead of being afterwards bent inwards by the " horizontal fingers." The chains may be made by hand.

[Printed, 8*d*. Drawing.]

A.D. 1866, February 8.—No. 389.

BOND, ROBERT, **BUSSELL**, WILLIAM JOSEPH, and **FISHER**, BENJAMIN SAMUEL.—(*Provisional protection only.*)—"An " improved substitute for emery to be used for cutting, grind" ing, and polishing metal, marble, glass, precious stones, and " other hard substances." This substitute is "the slag, " scoriæ, or dross" as obtained from the smelting furnace. The material is ground or reduced to a powder "by means of " edge runners or otherwise;" and it is then passed through sieves or otherwise separated into powders of different degrees of fineness. This powder may be used as a substitute for emery powder; or it may be caused to adhere to paper, cloth, leather, or other substance as a foundation.

The slag from different furnaces will produce powders of different cutting, grinding, or polishing qualities, "according " to the nature of the iron ore which is smelted therein, and " of the flux and fuel which are employed in the manu" facture."

[Printed, 4*d*. No Drawings.]

A.D. 1866, February 17.—No. 505.

WOODBURY, WALTER BENTLEY.—(*Provisional protection only.*)—"Improvements in the production of ornamental " surfaces for jewellery and other purposes." An impression or cast is taken in white material from a metal mould. This cast "will have the lights in high relief and the shades pro" portionately countersunk or depressed." The mould used is the one made by the method described in the Specification of

Letters Patent granted to the inventor on September 23rd, 1864, No. 2338, but "produced from a transparent photographic "positive." A coloured semi-transparent material is forced into the cast, and the surface of the material is ground or otherwise levelled down "until the white cast becomes "sufficiently visible through the semi-transparent material to "produce the effect desired." The two materials are fused or otherwise united either before or after the grinding.

Sometimes a metallic surface is produced in relievo or intaglio by the electrotype or other process; this is coated with silver or gold and afterwards is filled in with the semi-transparent material.

Sometimes an impression is taken in ebonite or other dark coloured substance; the effect is then produced by the dark colour showing more or less through the semi-transparent white or light coloured material with which it is filled.

[Printed, 4*d*. No Drawings.]

A.D. 1866, March 6.—No. 687.

BOUSFIELD, George Tomlinson. — (*A communication from Thomas Garrick.*)—(*Provisional protection only.*)— "Improvements in machinery for making eyelets." The moveable punch which cuts the blank is made with a matrix in its interior for shaping the exterior of the eyelet and with "a central cutting cavity for cutting out and receiving the end "punching of the eyelet."

"The cutting die which co-operates with the said punch" is made with a central core for shaping the interior of the eyelet and with a fixed punch "which is made to enter the central "cutting cavity" for the purpose of punching the end "from "the eyelet after it is completely formed."

The clearer consists of two or more small rods which "enter "the die from the rear in such a manner as to strike against "the expanded edge or flanch of the eyelet and eject it from "the die surely and without injury."

[Printed, 4*d*. No Drawings.]

A.D. 1866, March 10.—No. 735.

GEDGE, William Edward. — (*A communication from Lorenzo Salvy.*)—(*Provisional protection only.*)—"An im-

"proved manufacture of studs, buttons, ornamental plates, "and analogous articles used in saddlery and harness, "upholstery, military equipments, clothing, and for other "purposes, making them either of rolled, cast, or wrought "metal, or of any hard material such as horn, ivory, gutta "percha, wood, or hardened india-rubber, and with two or "several shanks or metal fastening rings or prongs." The stud consists of two plates (one forming a cap) and a piece of wire bent into a fork with two prongs. The lower plate is pierced with two holes for the passage of the prongs. The plate is fitted into the cap, and the whole is submitted to strong pressure, "which attaches them together, at the same "time giving to the cap any desired impression as well as the "shape and size required."

To fix this stud on a piece of saddlery the prongs cross each other and "form (being afterwards flattened) a sort of knot," and the same process is applicable to the manufacture of studs with several prongs.

"This method is also applicable for the fitting of ring "shanks or fastenings on to metal buttons or buttons made "of any hard material," with this difference, that "the two "ends of the fastening or ring are crossed and flattened "between the lower plate and the cap of the button."

[Printed, 6*d*. Drawing.]

A.D. 1866, March 14.—No. 762.

LÖWENSTEIN, MARTIN.—(*Provisional protection only.*)—"Improvements in bracelets and in fastenings for bracelets." The bracelet is made by preference in three parts, one part constituting half the bracelet, the other or moveable parts being jointed thereto. The bracelet is closed by connecting the outer ends of the moveable parts by a spring-catch fastening. The three parts are hollow, and two flat springs inside throw open the moveable parts, each lying partly in the half and partly in a moveable part, passing through the joint.

The fastening is of the following construction:—One of the moveable parts carries "a fixed hook-like catch" which engages in the end of the other moveable part. Inside this latter part is a nearly similar hook-like catch turning on a joint; this is pressed underneath by a spring which keeps the two hooks engaged together.

The unfastening is effected "by a slide near the central "ornament" of the bracelet. The slide communicates with one end of the flat spring in that part which carries the moveable catch, "and the other end of the said spring is "connected to the under side of the moveable catch." By pressing the slide towards the central ornament the spring is moved in the same direction, and the moveable catch is thereby pulled downwards.

The bracelet may be made in more than three parts; the unfastening may be effected "by pressure upon a stud instead "of upon a slide, or by a rotary or other motion."

[Printed, *4d.* No Drawings.]

A.D. 1866, April 21.—No. 1128.

MACINTOSH, JOHN, and BOGGETT, WILLIAM.—"Improve-"ments in guards for pocket-books, watches, and watch-keys." The object of this invention is to prevent pocket-books from being lost or mislaid, watches from being stolen from the person, and the works of watches from being injured by the dirt, &c. frequently found in the pipes of watch keys.

For pocket-books and watches a piece of elastic cord is fastened at one end to a piece of metal of any suitable shape; the piece shown in the sheet of drawings "has a sharp-pointed "spiral wire like a corkscrew projecting from its lower end." The wire is to be screwed into the lining of the pocket, and the other end of the cord is to be fastened to the book or watch.

The pipe of the watch key has a sliding metal plug fitted into it; the inner end of the plug is attached to a coiled spring, which allows the plug to recede while the watch is being wound up and keeps it flush with the outer end of the pipe when not in use. Or the pipe may be inserted into an elastic tube encased or not in a metallic tube.

The bar of an Albert chain, part of a pencil case, a charm, &c. may be arranged to carry a watch key and exclude dirt or dust from it. The key is inserted with the head outwards and held in place by a bayonet joint; the pipe presses against a spiral spring inside the bar.

[Printed, *6d.* Drawing.]

A.D. 1866, April 21.—No. 1131.

TAYLOR, John George.—(*Provisional protection only.*)—"Improvements in dress fastenings and ornaments." The first improvement relates to the manufacture of "clasps for buckles "without joints or rivets;" they are made by preference of hard india-rubber, horn, shell, or aluminium.

The second, to combining metals with the above materials; the buckle frame is made of hard india-rubber "ornamented "with a metal chain surrounding the buckle, the clasps of "which are also of metal."

The third, to making buckles entirely of metal, in one or more parts, "having a plate substituted for the clasp, also "of metal, for covering the opening in said buckle."

The fourth, to making "chains, used for ornamenting ladies' "hats;" they are composed "partly of leather or hard india-"rubber combined with steel or other metal."

The fifth, "to pins for shawls, hats, or for the hair;" the stems and the heads are connected by hooks and eyes.

The sixth, to "hollow ornaments in imitation of cameos, "birds, and other similar objects;" they are stamped out of "silk, alpaca, and other textile materials," and have a piece of linen, cotton, or other substance pasted to the back.

[Printed, 10*d*. Drawings.]

A.D. 1866, April 23.—No. 1139.

SPIQUEL, Michel, and FLORANGE, Eugene Henry.—"Improvements in stamping on flatted or unflatted metals." The patentees employ the aid of the hydraulic press for stamping out spoons, forks, jewellery, military ornaments or fittings, and hardware articles from sheet metal.

They place on the table fixed on the piston of the press a mould having a number of devices marked thereon, or a metal box or frame wherein are laid and secured as many moulds as they require. Another box containing the corresponding moulds is fixed to the head of the press. A sheet of metal having been placed on the moulds the piston is raised in the usual manner, and the moulds are subjected to sufficient pressure against the upper set to produce the required impression.

When the stamped metal is withdrawn, the articles are *separated* by means of a suitably shaped cutting tool.

The patentees make the boxes of wrought iron, and the moulds and cutting tools of tempered steel.

[Printed, 1*s.* 4*d.* Drawings.]

A.D. 1866, May 2.—No. 1243.

TOWERS, JOSEPH ROBINSON, **CLUTTERBUCK**, THOMAS, and **MUSCHAMP**, JOHN BELL.—(*Provisional protection only.*) —"An improved construction of pocket for male and female "attire." The pocket is made of the ordinary materials and shape, and is secured to the garment in the usual manner. It has "at its upper part in front, or the direction a hand would "most readily follow, an outer covering or case through which "the hand would pass." Beneath this, "at an angle with "the opening from the garment," is fixed a flap, "which "must be turned back before arriving at the entrance to the "pocket;" the entrance is placed "at the back or under side." A piece, "corresponding in form with the outer covering or "case upon the front," is stitched over, "below the actual "entrance to the pocket."

[Printed, 4*d.* No Drawings.]

A.D. 1866, May 4.—No. 1260.

FIELD, EDWARD.—"Improvements in attaching buttons, "clasps, hooks and eyes, and other similar fastenings to "leather or other partially elastic or yielding materials." The advantage claimed for this method of fastening is that "it is "unnecessary to puncture or destroy the continuity of the "material." The invention is described as applied to gloves and other articles of similar nature.

Attached to the button, &c. is a hollow or recess with the edge turned inwards. This recess is placed on one side of the material, and on the other side is placed a washer of such size that it may be thrust into the recess, "pressing the material "before it, and thereby jamming the material between it and "the inner surface of the recess."

Or the recess may be made without having its edge turned inwards; in this case the washer is similarly recessed, but of smaller size. When the washer and the material have been forced into the larger recess, "the two recessed pieces may

" be pressed or otherwise flattened," holding the material between them.

Sometimes the upper recess is made with a stud or projection, or the lower recess with a stud or hook, for attachment to a corresponding opening on the opposite side of the wrist of the glove.

[Printed, *6d.* Drawing.]

A.D. 1866, May 29.—No. 1500.

NURSE, Cedric.—(*Provisional protection only.*)—" A new " or improved fastening, applicable as a substitute for " buckles " for " straps for securing railway or carriage rugs, " for travelling bags, portmanteaus, braces," &c.

A metal plate, having one or more studs riveted to it and a loop formed at its outer end, is sewn to one end of the strap. The plate is " concealed under or between the leather or other " fabric " of the strap, and the studs (with slightly enlarged heads) project through holes in the strap. The other end of the strap (which has holes punched in it) is passed through the loop and is pressed down upon and over the studs, leaving the heads visible ; it is then " passed under a further loop or loops, " to secure the end in a flat position."

[Printed, *4d.* No Drawings.]

A.D. 1866, June 13.—No. 1602.

HOLLOWAY, John.—" Improvements in buckles or fastenings for braces, belts, and bands." 1. Brace buckles and mode of attachment :—The buckle consists of an upper and a lower part, by preference stamped out of sheet metal. The upper part is nearly flat ; the lower edge is straight ; a slot parallel with the lower edge causes the metal between them to serve as a bar, and at each end of the bar is a projection or bearing perforated laterally. The lower part is flat ; it carries a hook or ring at its lower edge ; its upper edge is straight ; near its upper edge are projections which take into the bearings in the upper part, and stops which allow the lower part to be raised only " in one direction out of the same plane as the " upper part." The edges may be serrated instead of being straight.

The brace length is passed from behind through the slot and *over the* bar, and then between the lower side of the bar and the top of the lower part; it is held tight between the parts, as they have "only a very narrow space between them when "they are in the same plane." The brace tabs are connected to the hook or ring.

2. Belt buckles and methods of attachment:—The upper and lower parts are worn horizontally; the part which was the lower one "is made much broader than in the case of a brace "buckle;" and a vertical slot is substituted for the hook or ring.

The two ends of the belt are "respectively passed from "behind through the slots," and then between the edges of the parts, as before described.

A modification of the belt buckle in which stops are not required:—The bearings are united by a bar; they are made with projections inside; the other part is formed with eyes "turned at right angles" thereto, and fitting on to the projections. The parts "do not lie in the same plane when "brought together, but in parallel planes." The action is the same as that of the buckles before described.

[Printed, 8*d*. Drawing.]

A.D. 1866, June 25.—No. 1690.

READING, JOHN, **READING**, SAMUEL ALFRED, **READING**, GEORGE EDWARD, and **READING**, FREDERICK FRANCIS.—"Improvements in fastenings for articles of dress." 1. "A lady's "belt clasp:"—It is composed of two separate parts, each cut with a vertical slot for attachment to the belt. One part consists of a catch, "which is inclined on a part of its edge" for the purpose of gliding over the inclined detent of a bolt in the other part. The other part "is a single front plate;" at the back is a case "for holding the action of a bolt," whose upper end "terminates with a thumb-bit and raised stop or "stops" and also with "a contracted part (that is to say, "pierced or otherwise formed) for receiving a helical spring "or other equivalent means that keeps the bolt to the extent of its throw or action, where it is retained by the "stop." In the outer side of the case is a slot for receiving the catch.

The belt is fastened by pressing the two parts of the catch together; it is unfastened by pressing on the thumb-bit, thereby contracting the spring and forcing the bolt into the case until the detent is "sufficiently depressed to free the "catch part."

The invention admits of modifications :—There may be two front plates, the catch being attached to, or forming part of, the outside of one plate. The catch may be made with "a "double incline," and there may be an upper and a lower bolt, spring, &c.

"The same arrangement" may be "equally as well applied "for a fastening for shawls, cloaks, or coats," also for garters.

2. A fastening for leggings and stay busks :—One limb is provided with the cases containing bolts and springs similar to those already described, the other with catches. The middle catch is not riveted to the limb "but slides (by means of a slot "cut into the face) upon a stud" riveted to the limb; it is made with a "finger-bit." In disconnecting the limbs "it is "necessary to first relieve the centre fastening and draw back "the slide by means of the finger-bit." This arrangement also admits of modifications which are described in the Specification.

[Printed, 1*s*. Drawing.]

A. D. 1866, June 29.—No. 1733.

ASHTON, JOSEPH.—(*Provisional protection only.*)—"Improvements in the manufacture of studs and buttons." In order that the disc at the rear end may be readily passed through a buttonhole, "a radial slot" is formed in the disc, or a segment is (by preference) cut away, "so removing about "$\frac{1}{8}$th or $\frac{1}{10}$th of the disc." To insert a disc thus formed, one of the points is thrust through the hole, and then the whole is "passed through by once turning round the button or "stud." To facilitate the insertion one of the points may be "slightly bent towards" and the other "away from the head "of the button"; or the edges of the slot or of the part cut away may be bevelled.

[Printed, 4*d*. No Drawings.]

A.D. 1866, July 2.—No. 1760.

FRIED, FRANZ.—(*Provisional protection only.*)—"New or "improved plastic compounds applicable to various purposes

" where wood, horn, and other like substances are now em- " ployed." The inventor describes the essential ingredients, the proportions, and the processes of mixing and moulding the compound which he proposes as a substitute for wood, horn, &c. The composition varies according to the purposes to which the compound is to be applied,

For the manufacture of black buttons the ingredients and proportions are, 6 parts of powdered wood charcoal, 3 of sawdust dyed black, 2 of powdered coke, 1⅓ of patent black, and 3¾ of quicklime, all by weight. No information is given respecting the method of manufacture.

[Printed, 4*d*. No Drawings.]

A.D. 1866, July 26.—No. 1945.

HAYEM, Isidore, junior.—(*Provisional protection only.*)— " Improvements in buttons or studs to be used for fastening " the shirt, the false collar, and the cravat or bow cravat, " ladies' collars and cravats, or other wearing apparel." Two arrangements are described. In the first the inner portion of the shank "is flattened to enable it to hold well in the button- " holes." The outer portion has a mortise formed in it. A piece with a hook attached to it "is sewn behind the knot" of the cravat; the hook takes into the mortise.

In the second, the outer portion of the shank "is elliptical, " its large axis is horizontal, and its extremity is screw- " threaded." The piece is made with a hollow projecting portion which passes through the knot of the cravat; the outer portion of the shank passes through the hollow and is screwed to the threaded shank of a jewel. Part of the piece "corre- " sponds with the elliptical portion of the button and main- " tains the knot in the desired position."

In applying the invention to "stand-up collars" it is desirable "to have a piece of fabric surrounding the neck to form " a cravat."

[Printed, 6*d*. Drawing.]

A.D. 1866, August 3.—No. 2004.

WHITTAKER, James.—" Improvements in ladies' dress sus- " penders." Cords, extending downwards and carrying each a spring hook at bottom, are attached to a belt which is fastened round the waist by a spring buckle or other means. Through the hook passes "a horizontal elastic or non-elastic cord or "band of any requisite length on the outside of the dress."

To suspend the skirt "it is raised by the hands and then "allowed to double over the horizontal cord or band."

"The horizontal cord when made elastic and furnished with "a spring hook or other fastener can be used by itself to "support the dress," dispensing with the vertical cords and belt.

[Printed, 4*d*. No Drawings.]

A.D. 1866, August 9.—No. 2057.

GEDGE, William Edward.—(*A communication from Charles Alfred Tordery.*)—(*Provisional protection only.*)—"Improvements in the construction of buckles or fastenings "for braces and other articles." These buckles are made "without tongued or pronged bars." A piece of metal is stamped out "hollow" (for the shape see the annexed drawing) "to the extent of a little more than the thickness of half the "metal;" it is then "folded in two" so that the upper half comes on the lower, and "the two hollows coming one above "the other leave a space a little greater than the thickness of "the object which is to slide in it." A rectangular frame is placed "in the space between" the folded parts; it slides "from bottom to top."

"The bottom and top of this buckle" serve to support the brace "which is looped over." The brace "pressed between "the moveable bar and the bottom of the buckle is so held "that it cannot give, the pressure being always in proportion "to the tension of the woven fabric, leather, hide, or other "material."

To shorten the brace "all that is required is to pull the "end;" to lengthen it "lift the lower part of the buckle."

A modification is described which "gives precisely the same "results;" it consists of "two distinct parts superposed and "held on one side by compression, on the other by suspension."

[Printed, 6*d*. Drawing.]

A.D. 1866, August 18.—No. 2122.

WEATHERDON, Baldwin Fulford.—(*A communication from Charles Nivert.*)—(*Provisional protection only.*)—"An "improved buckle," to which bands or other articles of clothing can be attached "without slipping or twisting on one side."

The outer bar of the buckle (to which the band or fabric is secured) is perforated or slotted out in the form of eyelet holes or otherwise, and the band or fabric is sewn thereto or affixed "through the medium of stud fastenings passing through the "said perforations or slots." By this means the band, &c. is immovably fixed on the bar and prevented from slipping or being disarranged when in use.

[Printed, 4*d*. No Drawings.]

A.D. 1866, September 1.—No. 2250.

BOUSFIELD, George Tomlinson. — (*A communication from Thomas Garrick.*)—"Improvements in machines for "making eyelets." This apparatus consists of two distinct eyelet making machines driven by one shaft; they are alike in every particular except that "the eyelet forming parts and "their immediate auxiliaries" may be of different size.

The parts of the machine are mounted on a cast-iron bed standing on legs and provided at its outer edge with a trough "to catch and keep the oil, &c. from the floor." The moving parts are arranged in lugs which project from the surface of the bed. The shaft carries a pulley and a catch operated by a lever. In each machine a plunger linked to a crank on the shaft carries at its outer end "the moveable portion of the "eyelet forming parts," and "is reciprocated longitudinally "in the lugs." These parts are a moveable cutter, which cuts the blank "with a mould in its interior composed of a "drawing cavity," and "an eyelet shaping cavity or mould "die," and "a central cutting cavity or cutting shoulder for "cutting out and receiving the end punching or chip from the "small end of the eyelet." The chip is carried through a tubular passage into the interior of the plunger and escapes thence by a tube.

The fixed portions of the eyelet making parts are held in the face of another lug; they consist of "a cutting die" of a size to receive the end of the cutter and "a central hub or core" (for shaping the interior of the eyelet), the end of which forms "a fixed punch, with a square cutting edge of a diameter to "enter the cutting cavity." Upon the end of this fixed punch is

" a rounded protuberance," which "pushes the centre of the " metal disc beyond the end of the punch," thereby preventing the metal "from bending so sharply across the cutting edge as " to prevent the metal from stretching evenly from the centre " to the periphery of the disc" until the operation of forming it into an eyelet is completed. The eyelet when formed " remains in the cavity of the cutting die sticking upon the " fixed punch;" it is removed (and drops into a funnel) by two or more rods, which pass through the rear of the die " close to the central hub and between it and the cutting edge " of the die." The rods receive their motion from a yoke attached to the end of the plunger.

The metal in the form of a narrow strip is held in a circular cavity in a holder. Surrounding the cavity is an oil receptacle shallow at one end and gradually deepening to the other, " where is an outlet through which the flow of the oil is regu-" lated by a bunch" of fibrous material. Next to the outlet is a passage for the strip; the side next to the outlet in passing " is smeared with oil which serves to lubricate the drawing " die and mould and prevent it from wearing or heating." The strip passes through a narrow slit in front of the die " and formed by a thin flat strip or plate placed over the " cutting die, with a sufficient opening cut therein to admit " the cutting punch to the die, the said opening serving to " clear the strip from the end of said cutting punch after its " operation is completed and when it is withdrawn from the " die." The strip is fed in by means of a pair of fluted rollers between which it "is punched and driven through by inter-" mittent movements" by means of a ratchet and pawl.

The arrangement of the various parts and the method of working the apparatus are fully described in the Specification.

[Printed, 10*d*. Drawing.]

A.D. 1866, September 10.—No. 2322.

GEDGE, William Edward. — (*A communication from Lorenzo Salvy.*)—(*Provisional protection only.*)—" An im-" proved manufacture of studs, buttons, ornamental plates, " and analogous articles used in saddlery and harness, up-" holstery, military equipments, clothing, and for other pur-" poses, making them either of rolled, cast, or wrought metal,

" or of any hard material, such as horn, ivory, gutta percha, " wood, or hardened india-rubber, and with two or several " shanks or metal fastening rings or prongs." The stud or button is composed of an upper and a lower plate (the upper forming a cap) and a piece of wire or other metal bent into the shape of the prongs of a fork. The lower plate is pierced with two holes for the passage of the prongs; the plate carrying the fork is fitted into the cap; and the whole is " submitted to a strong pressure, which attaches them together, at the same time giving to the cap any desired " impression, as well as the size and shape required."

To fix this stud on a piece of saddlery the prongs are caused to "cross each other and form (being afterwards flattened) a " sort of knot." There may be more than two prongs.

"This method is also applicable for the fittings of ring " shanks or fastenings on to metal buttons or buttons made of " any hard material," with this difference "that the two ends " of the fastening or ring are crossed and flattened between " the lower plate and the cap of the button."

[Printed, 4*d*. No Drawings.]

A.D. 1866, September 15.—No. 2373.

NEWEY, Thomas.—"Improvements in clips or fastenings for " the bands of purses and pocket books, and for other bands, " and for other like purposes." The patentee applies his invention to "dress belts" and "the ends of crinoline."

The fastener is made from two metal blanks rectangular in figure and similar in shape. The longer sides of each blank are cut so as to leave on one a broad projection, and on the opposite side two narrow ones; the broad projections are of a length equal to the space between the narrow ones, and all are converted into knuckles for hinges. Serrated tongues (facing each other) are cut out of one blank " and raised from "the plane" thereof. The blanks are hinged on one side (the knuckles being inverted) by a pin passed through and riveted.

The ends of the article to be secured are placed upon the tongues; the other side of the fastener is brought over so that its broad knuckle coincides with the narrow ones; and a bolt or headed pin is passed through the three knuckles.

[Printed, 6*d*. Drawing.]

A.D. 1866, September 27.—No. 2504.

DROMTRA, FRIEDRICH WILHELM CONSTANTIN. — (*A communication from Theodore Neuscheller.*)—"Improvements "in the means of securing pocket books and other portable "articles on the person." This invention is described as applied to a pocket book. A plate is riveted under the outside leather. On the plate are staples in which a rod turns in either direction to a certain extent when actuated by one of its ends that extends beyond the edge of the book and carries at its outer extremity a thumb piece. The rod carries a hook pointed at its outer end, and in the plate is a slot for the reception of the back of the hook "when the latter "is in its opened or disengaged position." A knob is fixed at one end to the rod; it works at its outer end against the free end of a spring which is riveted at one end to the plate and extends under a slot in the plate; this end "is slightly rounded "or convex for the purpose, though the rest of the spring is "flat." The plate is slotted for the knob to work through, and the lateral edges of the slot are bent up to form stops. On the outside of the book is a raised or convex plate pierced with a slot and a round orifice for the hook to work in, and the material between the plates is cut with suitable openings.

To secure the book to the pocket of a garment, turn the rod so as to raise the hook and move it through the slot in the convex plate so as "to penetrate the lining of the pocket;" continue to turn the rod and thereby pass the pointed end of the hook "again through the lining" and "out of such lining "into the orifice" where it is retained by aid of the spring.

To protect a watch the apparatus "may be attached to the "pendant."

[Printed, 8*d*. Drawing.]

A.D. 1866, October 4.—No. 2554.

SEARLE, GEORGE ELLIOTT.—"Improvements in ear-rings, "which improvements may also be applied to the fastening "of watch hooks and other articles of jewellery." Two wires, each having (for ears which are not pierced) a disc at the upper end, are connected to "the ornamental body or top" of the ear-ring, the front one by soldering, the back one by a hinge. A screw, having an ornamental head and a stop at the other end, works through the body, and by bearing against the tail of the back wire presses the disc of the back wire against the other disc, so that the lobe of the ear is grasped between them.

Or the back disc may be pressed against the front one by means of a coiled or other spring attached to the body and bearing against the tail of the back wire. A screw, to adjust "the exact pressure necessary for grasping the lobe of the ear "safely," passes through the back wire; its point bears against the back of the body. To detach the ear-ring when a coiled spring is used, a recess (for the tail portion of the back wire to enter) is made in the tube which encloses the spring.

If the ears are pierced, the end of the fixed wire is pointed, and the end of the back wire is hollow or cup-shaped (or vice versa.) The tail of the back wire may be pressed up by either a screw or a spring.

Instead of using two wires, a disc "may be supported by a "wire nearly parallel" with the body, and a screw with a disc on its inner end may be made "to work through the "middle" of the body. By placing the lobe of the ear between the body and the fixed disc and driving home the screw, the lobe "is grasped between the fixed disc and that "on the end of the screw." For a pierced ear "the screw "may be without a disc and be pointed at its end."

[Printed, 6*d*. Drawing.]

A.D. 1866, October 5.—No. 2569.

BADCOCK, James.—(*Provisional protection only.*)—"Improvements in the manufacture of ornaments for the wrist." The improvement consists in combining an ornamental metal band with a cuff or wristband of linen or other fabric. The band is by preference of thin metal capable of being readily bent with the fabric round the wrist; but it may be made in parts and capable of bending like a bracelet; the back is formed with shanks or other means for attachment to the cuff. The cuff may be of any desired shape and fastened round the wrist by buttons or otherwise.

[Printed, 4*d*. No Drawings.]

A.D. 1866, October 19.—No. 2709.

PARKES, Alexander.—"Improvements in the manufacture "of parkesine or compounds of pyroxylin, and in the produc-

"tion of imitations of ivory and pearl." To produce an imitation of ivory, sheets of dissolved pyroxyline, "rendered "white and opaque" by the addition of a suitable pigment, are combined with sheets produced from dissolved pyroxyline without pigment. The material "in a dough-like state" is rolled out into sheets about "a sixteenth of an inch thick;" a block is built up of these sheets placed alternately on each other, "working in geometric forms so as to give a pleasing "figure or grain where the built-up mass is cut."

To make an imitation of pearl dissolved pyroxyline is combined with fish scales (by preference such as are now used in making artificial pearls); colouring matters (dyes or stains, not pigments) may be added to the solvent. "To obtain a "thin sheet or veneer of pearl-like material," pyroxyline is ground to a doughy mass with solvent and oil; pearl lustre is mixed with it (in the proportion of about 1 part to 100 parts of pyroxyline); the solvent is separated; and the compound is rolled out into sheets by means of heated rollers. Or the material may be moulded or otherwise shaped.

Sometimes instead of separating the solvent, a further quantity of solvent is added "so as to obtain the material in a "semi-liquid form;" this may be applied as a coating to surfaces. In this preparation the proportion of pearl lustre should be considerably increased.

The patentee claims the employment of "rollers coated with "platinum" in the manufacture of "the pearl and ivory "parkesine herein-before referred to and also parkesine of "light colours," so that "the manufacture may not be soiled "in consequence of the action of the material on the metal "rollers."

[Printed, 4*d*. No Drawings.]

A.D. 1166, October 23.—No. 2731.

RICHARDS, JOHN.—"Improvements in the manufacture of "certain parts of brooches and other similar dress fastenings "and ornaments." The parts to which this invention relates are the pin, the catch, and the loops for securing the same.

The pin and the catch are made from one piece of wire coiled at the middle so as to form a spring joint similar to that of a safety pin. The part which constitutes the pin *is pointed* at the end. Loops, generally three in number, are raised up out of the plane of the back of the brooch by means of piercing and shaping tools worked in a press. The unpointed part of the wire is passed through the loops, and the protruding end, being bent up at a right angle and shaped into a hook, forms the catch.

In jet ornaments the metallic back is provided with ears for the attachment of the jet fronts.

In scarf pins having "a jet or non-metallic front" the bent free end of the connecting wire of the pin forms "one of the "ears" instead of "forming the catch."

In sleeve links the end of the pin is provided with a knob, and the part which engages with the catch is bent out of the plane of the other part.

The catch may be a separate piece; in such case the end of the wire which is passed through the loops is turned up or expanded.

[Printed, 8*d*. Drawing.]

A.D. 1866, October 27.—No. 2781.

HUDDART, GEORGE AUGUSTUS.—(*Provisional protection only.*)—"Improvements in buttons and in the attachment of "buttons to garments and fabrics." The object of this invention is to regulate "axially" the position of buttons "carrying "a symbolical initial or other significant device and requiring "to be fixed with the device upright."

The shank is made of a U-shape, the legs projecting through the back of the button. Two metal eyelets are secured in the fabric at suitable distances apart; a leg is passed through each and then either turned down or expanded.

[Printed, 4*d*. No Drawings.]

A.D. 1866, October 29.—No. 2786.

TUBINO, FRANCESCO.—(*Letters Patent void for want of Final Specification.*)—"Improvements in lockets, which improve-"ments may also be applied to brooches, bracelets, and other "articles of jewellery and dress." The inventor describes his improvements applied to a locket within which are two moveable frames containing "portraits or other articles."

The outer case is open at both ends and is usually of a rectangular shape, and the frames slide into and out of it.

To the inner end of each frame "a thin plate nearly half the "width of the frame" is affixed, and "the inner longitudinal "edges" of the plates "are made into racks." In the middle of the case is a pinion, the teeth of which are in gear with the racks. The outer end of one of the frames is provided with a ring or projection.

On drawing one of the frames (the one with the ring) outwards, the rack attached to it gives motion to the pinion, and the pinion gives motion to the other frame "but in an "opposite direction;" consequently the two frames are "simultaneously moved" from out of the case. On pushing one of the frames into the case the other "is also simultaneously "drawn inwards by the action of the pinion."

[Printed, 4*d*. No Drawings.]

A.D. 1866, November 7.—No. 2892.

NEWEY, JAMES CLEMENT.—"Improvements in the manu-"facture of clasps for stay busks, braces, belts, garters, boots, "leggings, gloves, and bands." Instead of stamping or cutting clasps out of brass or other sheet metal, the patentee makes them of the required shape and strength from "brass "or other hard or soft wire" and afterwards flattens them "with rollers or an ordinary stamp or press."

"This method of manufacture," says the patentee, "will "permit the use of machines worked by power," thereby economizing time, labour, and material, and producing at a cheaper rate "a better, stronger, more durable, and highly "finished article."

[Printed, 8*d*. Drawing.]

A.D. 1866, November 9.—No. 2921.

JOHNSON, JOHN HENRY.—(*A communication from Emile Elie Thiercelin.*)—"Improvements in fastenings or couplings." This fastening is "susceptible of numerous applications," and amongst them are mentioned "snaps for fastening the ends of "necklets, chains, and bracelets."

The fastening consists of "a stem and a socket combined "with a locking and releasing pin." The interior of the socket corresponds to the shape of the stem, and "through "*one* side of it there is passed transversely the locking

" and releasing pin, which in all cases is of a circular " section."

When the fastening is applied to "rack chains for stables" and (when constructed in like manner on a much smaller scale) " to swivels and similar fastenings for articles of jewellery," the stem has "an annular groove" cut in it, so that it " is enabled to turn freely or swivel inside the socket" even when the pin is engaged in the groove.

The pin is "provided with a curvilinear notch, the radius " of which is equal to that of the bore of the socket." In fastening the parts together, the pin is thrust into the socket and turned so as to cause its notch to coincide with the interior of the socket; a free ingress is thus afforded to the stem, and when it is thrust home, it is secured by turning the pin so as to bring its solid part into the groove. To release the parts the pin is turned back again by a handle which is attached to it.

[Printed, 8*d*. Drawing.]

A.D. 1866, November 12.—No. 2951.

PERRY, George.—"Improvements in lockets, brooches, and " other articles of jewellery." These articles are constructed with mechanism by means of which "any one of a series of " photographic or other miniatures" contained in the article, or the day of the week, the day of the month, and the name of the month can be exhibited at pleasure. The invention is described in connection with a locket.

The frame of the locket is made with a hinged outer and inner lid. In the latter (which if preferred "may be snapped " into the frame" instead of being hinged thereto) is an opening for the exhibition of the miniature or calendar.

In the arrangement for the display of miniatures, two rollers turn in bearings in the ends of the body of the locket. An endless flexible band whereon the miniatures are fixed is stretched round the rollers. Each roller carries at one end a pinion in gear with the pinion of a "middle axis," whose end projecting through the top of the body is provided with a milled or other head. Sometimes the miniatures are fixed on a flexible band, whose ends are fixed respectively to the two rollers; the mechanism (in addition to the above) for unwinding the band from the roller on which the band has been wound is described in the Specification.

In the arrangement for showing the date, &c. the body of the locket is divided into three compartments. In the topmost are rollers, an endless band having on it the numerals 1 to 31, pinions, &c., working as above described. In the middle compartment are two rollers having stretched round them an endless band with the days of the week thereon; the end of the axle of one of these rollers passes through the bottom of the locket body. In the lowest compartment are similar rollers and an endless band on which are the names of the month; the end of the axle of one of these rollers also projects through the bottom; each projecting axle carries a milled head. The heads are prevented from being accidentally turned "by means of a hinged cover."

The arrangements of the foregoing mechanism "may be "varied without departing from the nature" of the invention.

[Printed, 6*d*. Drawing.]

A.D. 1866, November 15.—No. 2992.

VAUGHTON, THOMAS, and VAUGHTON, OLIVER.—(*Provisional protection not allowed.*)—"Improvements in the con-"struction of articles of jewellery." The main portion or body of the article is made with a hollow space for the reception of a photograph or hair or scent, &c. The cover is attached to the receptacle by a joint, "the axis of which is at right angles "with the plane of its movements;" consequently it can be slided on or off. A stop constructed with a spring catch or other contrivance holds the parts when closed.

[Printed, 4*d*. No Drawings.]

A.D. 1866, December 8.—No. 3239.

SOUTHALL, HENRY.—(*Provisional protection only.*)—"Improvements in buckles." The improvements, although especially applicable to harness buckles, are also applicable "to buckles for other purposes." The strap or band fastened by the buckle may be detached without "raising the tongue."

The frame and the bar are made in separate pieces. On the ends of the frames are knuckles drilled with holes, one being a screw thread. On one end of the bar is a screw, on the other "a ring-like handle." The bar is passed through the plain knuckle hole and through the eye of the buckle tongue, and is then screwed into the thread. On each side of the eye the bar carries a small tubular roller provided with a metal flap "which is inserted between and sewn into the folded or doubled "part" of the strap.

The strap is detached by unscrewing and withdrawing the bar.

[Printed, 4*d*. No Drawings.]

INDEX OF SUBJECT MATTER.

[The numbers refer to the pages on which the Abridgments commence. The names printed in *Italic* are those of the persons by whom the inventions have been communicated to the Applicants for Letters Patent.]

Alloys intended for jewellery:
Abel (*De Ruolz*), 316.
Abel (*De Ruolz and Fontenay*), 336.

Armlets, mode of fastening:
Long, 219.

Backband fastenings for vests, trousers, &c.:
Herbert, 55.
Barnett, 62.
Chambers, Franklin, and Rowley, 73.
Moss, 79.
Masters, 121.
Bradshaw, 135.
Carpenter, 286.
Clark (*Cousin and Duval*), 294.
Clements, 325.
Singer, 409.
White and Chamberlain, 425.

Beads, making, drilling, &c.:
Brunker, Reignolds, and Horne, 1.
Hewson, 149.
Davenport and Cole, 326.
Davenport and Cole, 375.

Belt and band fastenings: *See also* Buckles; Clasps; Slides.
Philippe, 9.
Hall, 34.
Chambers, Franklin, and Rowley, 73.
Masters, 121.
Cooper, 124.
Rowley, 128.
Bradshaw, 135.
Jones, 153.
Haworth, 177.
Brough, 177.
Carpenter, 180.

Belt and band fastenings—*cont.*
Haworth, 181.
Walsh and Brierley, 186.
Brough, 187.
Wright, 199.
Pilliner, 203.
Morrison and Amphlet, 209.
Jenkins, 212.
Brough, 215.
Mill, 218.
Forrest, 221.
Barnett, 223.
Johnson (*Marie*), 223.
Wilkins and Milward, 230.
Dadley and Brough, 241.
Scheidel (*Gouda*), 252.
Bent, 254.
Brierley, 271.
Landsberg, 276.
Carpenter, 286.
Bent and Luckock, 292.
Clark (*Cousin and Duval*), 294.
Brough and Kilby, 295.
Lingham and Nicklin, 299.
Brierley, 302.
Mac Doual, 306.
Westbury and Cooke, 308.
Weston, 309.
Paterson, 312.
Heinemann (*Stautz and Co.*), 314.
Cross, 317.
Janvier, 319.
Jones, 320.
Lepeinteur, 323.
Smith, 325.
Brierley, 330.
Brierley, 335.
Clark (*André*), 337.
Wilson, 342.
Wilson, 345.
Edwards, 353.
Watson, 365.
Ashwin, 367.
Cutler, 368.
Brierley, 377.
Atkins, 380.

Belt and band fastenings—*cont.*

- Winkles, 381.
- Williams, 390.
- Taylor, 400.
- Brierley, 401.
- Allender and Cashin, 417.
- Allender and Cashin, 429.
- Walker, 432.
- Taylor, 446.
- Holloway, 448.
- Reading, 449.
- Newey, 455.
- "Elongating and contracting;"
  - White and Chamberlain, 425.

Boot and shoe fastenings: *See also* Buckles.

- Jukes, 23.
- Smith, 30.
- Guest, 30.
- Adams, 32.
- Hall, 34.
- Hougham, 34.
- Hancock, 37.
- Chambers, Franklin, and Rowley, 73.
- Masters, 121.
- Finch, 161.
- Finch, 173.
- Thurel, 316.
- Coathupe, 333.

"Bows for handles" for lockets:

- Benson, 230.

Brace buttons: *See* Buttons.

Brace fastenings: *See also* Buckles.

- Rodgers, 56.
- Beater, 88.
- Bradshaw, 135.
- Dadley and Brough, 241.
- Clark (*Cousin and Duval*), 294.
- Brough and Kilby, 295.
- Lingham and Nicklin, 299.
- Westbury and Cooke, 308.
- Paterson, 312.
- Ashwin, 367.
- Allender and Cashin, 417.
- Allender and Cashin, 429.
- Holloway, 448.

Bracelets:

- Combined with cuff or wristband;
  - Badcock, 457.

Bracelets—*cont.*

- Fastenings for; *see also* Clasps.
  - Philippe, 9.
  - Taylor, 135.
  - Goode, Boland, and Newman, 138.
  - Long, 219.
  - Dècle and Drault, 220.
  - Friedmann, 250.
  - Lion, 315.
  - Cross, 317.
  - Clark (*Fauche and Ravaut*), 332.
  - Lane, 356.
  - Winkles, 381.
  - Löwenstein, 444.
  - Johnson (*Thiercelin*), 461.
- Making;
  - Whitehouse, 3.
  - Brockedon and Hancock, 113.
  - Jenkins, 151.
  - Dècle and Drault, 220.
  - Davenport and Cole, 221.
  - Huber, 238.
  - Newey and Newey, 238.
  - Emanuel, 335.
  - Hands and Holland, 348.
  - Lund, 388.
  - Buffoni, 394.
  - Lund, 405.
  - Béziel, 420.
  - Giuliano, 426.
  - Löwenstein, 444.
- Of bogwood and other materials;
  - Johnson, 150.
  - Ryland, 183.
  - Speight, 232.
- With reversible ornaments;
  - Jones and Abrahall 359.
  - Tubino, 459.

Breast pins, shawl pins, &c.:

- Chambers, Franklin, and Rowley, 73.
- Rowley, 128.
- Taylor, 135.
- Goode, Boland, and Newman, 138.
- Kosmann, 141.
- Rogers, 147.
- Jenkins, 151.
- Quinton, 152.
- Edridge, 217.
- Huber, 238.
- Haseler, 303.
- Desborough, 322.
- Emanuel, 335.
- Bettle, 371.
- Brown, 375.
- Taylor, 446.
- Richards, 458.
- Ornamenting;
  - Lowe, 40.
  - Davenport and Cole, 221.

Breast pins, shawl pins, &c.—*cont.*
- Ornamenting—*cont.*
  - Buller, 270.
  - Clark (*Bouret and Ferré*), 293.
  - Taylor, 299.
  - Taylor, 351.

Brooches:
- Containing space for scent;
  - Kain, 364.
  - Vaughton, 462.
- Fastenings for;
  - Frearson, 83.
  - Harding, 131.
  - Rowley, 133.
  - Kosmann, 141.
  - Quinton, 152.
  - Taylor, 155.
  - Rowley, 167.
  - Fase, 175.
  - Johnson (*Bourdon*), 187.
  - North, 205.
  - Forster, 210.
  - Taylor, 212.
  - Long, 219.
  - Brown and Jeffery, 280.
  - Davey, 282.
  - Brown and Jeffery, 291.
  - Brookes and Adams, 291.
  - Mac Doual, 306.
  - Brown and Jeffery, 306.
  - Lingard, 315.
  - Desborough, 322.
  - Watson, 325.
  - Lane, 356.
  - Antill and Wilkinson, 372.
  - Lazarus, 376.
  - Atkins, 380.
  - Parsons, 392.
  - Blackham, 406.
  - Gordon, 408.
  - Pulvermacher, 413.
  - Lilly and Sunderland, 424.
  - Allies, 436.
  - Richards, 458.
- Joints for pins of;
  - Brookes and Adams, 291.
  - Haseler, 303.
  - Antill and Wilkinson, 372.
  - Richards, 458.
- Making;
  - Rowley, 133.
  - Johnson, 150.
  - Jenkins, 151.
  - Fase, 175.
  - Lepage, 192.
  - Long, 219.
  - Davenport and Cole, 221.
  - Huber, 238.
  - Brown and Jeffery, 280.
  - Brown and Jeffery, 291.

Brooches—*cont.*
- Making—*cont.*
  - Clark (*Bouret and Ferré*), 293.
  - Brown and Jeffery, 306.
  - Emanuel, 335.
  - Hands and Holland, 348.
  - Bettle, 371.
  - Lund, 388.
  - Lund, 405.
  - Haseler, 410.
- Ornamenting;
  - Forrest, 221.
  - Buller, 270.
  - Smith, 325.
  - Amphlet, 327.
  - Lane, 356.
- Pins of, protecting and securing, &c.;
  - Rowley, 133.
  - Goode, Boland, and Newman, 138.
  - Reading, 198.
  - North, 205.
  - Meall, 243.
  - Haseler, 303.
  - Cole, 365.
  - Perks, 373.
- Reversible and with reversible ornaments;
  - Jones and Abrahall, 359.
  - Tubino, 459.

Buckles:
- Brace;
  - Paterson, 149.
  - Carpenter, 180.
  - Brough, 187.
  - Jenkins, 212.
  - Brough, 215.
  - Dadley and Brough, 241.
  - Scheidel (*Gouda*), 252.
  - Paterson, 255.
  - Brierley and Old, 263.
  - Clark (*André*), 337.
  - Wilson, 345.
  - Brierley, 373.
  - Law, 387.
  - Holloway, 448.
  - Gedge (*Tordery*), 452.
- Covering with leather;
  - Myring, 296.
- "Elastic spring";
  - Cheston, 17.
- For general purposes;
  - De la Chaumette, 1.
  - Bell, 4.
  - Winwood, 5.
  - Gray, 7.
  - Alston, 14.
  - Freeth, 24.
  - Davies, 35.
  - Rodgers, 56.
  - Barnett, 62.
  - Dez Maurel, 75.

Buckles—*cont.*
For general purposes—*cont.*
Braithwaite, 99.
Lawrence, 103.
Rowley, 106.
Bailey, 127.
Paterson, 149.
Jenkins, 151.
Sanguinède, 154.
Blatin, 162.
Willis, 167.
Willis, 168.
Bourne, 169.
Smith, 181.
Brough, 189.
Thérèse, 197.
Farmer, 208.
Ghidiglia and Turletti, 209.
Jenkins, 212.
Jones, 226.
Holden, 226.
Paterson, 231.
Edwards, 254.
Reynaud, 292.
Chassang (*Ghidiglia*), 300.
Tomlinson, 305.
Girardet, 338.
Paterson, 355.
Blackburn, 371.
Brierley, 373.
Fenby, 383.
Couchman, 393.
Taylor, 400.
Taylor, 446.
Weatherdon, 452.
Southall, 462.

Garter, trouser, and vest;
Eyland, 239.
Dadley and Brough, 241.
Gedge (*Tissinier*), 300.
Clark (*André*), 337.
Eyland, 352.

Hat-band;
Dadley and Brough, 241.

Jump;
Proudfoot, 5.

Knee and stock;
Proudfoot, 5.
Stedman, 7.
Playfair, 12.
Tylee, 27.

Ornamenting;
Hands, 26.
Jones, 256.
Buller, 270.
Taylor, 400.
Taylor, 446.

Plating metals for;
Playfair, 12.
Alston, 14.

Shoe;
Proudfoot, 5.
Stedman, 6.
Stedman, 7.
Eley, 8.

Buckles—*cont.*
Shoe—*cont.*
Eley, 8.
Taylor, 10.
Hall, 11.
Playfair, 12.
Dudley, 18.
Tylee, 22.
Stedman, 23.
Hands, 24.
Freeth, 24.
Elin, 25.
Maxwell, 25.
Law, 26.
Tylee, 27.
Guest, 30.
Bell, 31.
Adams, 32.
Hougham, 34.
Clark (*André*), 337.

Slide;
Brough, 187.

Substitute for;
Jukes, 23.
Smith, 30.
Hall, 34.
MacEvoy, 69.
Beater, 88.
Reading, 100.
Cooper, 124.
Carpenter, 126.
Carpenter, 180.
Barrow, 258.
Nurse, 448.

With detachable tongues;
Simpson, 85.

With guard attached;
Braithwaite, 99.

With lock attached to frame;
Brooman (*Cordier*), 237.

"Button-board," substitute for:
Sheldon, 94.
Walker, 152.

Buttons:
Attachable without sewing;
Christophers, 44.
Christophers, 45.
Barnett, 62.
Hawkins (*Van Esschen*), 63.
Barsham, 69.
Falconer, 78.
Bailey, 127.
Newey and Newman, 129.
Harding, 131.
Williams, 132.
Rowley, 133.
Taylor, 135.
Twigg, 145.
Perreyon, 153.
Jackson and Jackson, 157.
Fontainemoreau, 162.
Smith, 165.

Buttons—*cont.*
Attachable without sewing—*cont.*
Rowley, 167.
Iliffe and Brough, 171.
Cox, 171.
Rose, 174.
Brough, 175.
Gardner, 191.
Thompson and Wilson, 197.
Scott, 199.
Owen, 200.
Jerome, 203.
Griffin and Duley, 207.
Goll, 207.
Taylor, 212.
Horrex, 215.
Barnett, 223.
Poupard, 224.
Munt, 227.
Purcell, 227.
Brough, 249.
Felton, 251.
Wilkinson and Whitley, 262.
Scott, 274.
Powell, 279.
Brooman (*Dollier*), 280.
Davey, 282.
Le Richeux, 286.
Watson, 325.
Clements, 325.
Bailey, 328.
Baumann, 329.
Clark (*Dupont*), 339.
Taylor, 342.
Champion, 345.
Huddart, 350.
Huddart, 351.
Taylor, 351.
Huddart, 353.
Strawson, 356.
Marsden, 357.
Mac Millan, 363.
Gengembre, 381.
Andrews, 382.
Charles, 383.
Dean, 386.
De Wailly, 392.
Huddart, 394.
Bussey, 397.
Davies (*Reed*), 402.
Scott, 403.
Pulvermacher, 413.
Davies (*Reed*), 415.
Huddart, 417.
Hart, 419.
Huddart, 428.
Dahis, 433.
Bousfield (*Palmer*), 433.
MacClenahan, 437.
Gedge (*Salvy*), 443.
Huddart, 459.

Brace; *see* Four-hole &c.

Carding, &c.; *see* Carding.

Cast; *see* Moulded, &c.

"Centre pattern";
Rowley, 106.

Buttons—*cont.*
Coating metal and fabrics for parts of;
Jaquin, 68.
Aston and Elliott, 85.
Brindley, 144.
Iliffe and Newman, 163.
Hiler, 244.
Edwards, 267.
Edwards, 322.
Maurice (*Hayem*), 382.
Lake (*Watkins*), 430.

Composed of two discs and a shank between them;
Rodgers and Tatain, 46.
Gibbs, 54.

Composition;
De la Mayne, 12.
Prosser, 61.
Elliott, 102.
Foster, 118.
Iles, 126.
De Serionne, 129.
Newton, 131.
Duthoit, 144.
Hewson, 149.
Duméry, 157.
Iliffe and Newman, 163.
Fontainemoreau, 168.
Bellford, 172.
Quiquandon, 180.
Hess, 252.
Patrick, 263.
Smith, 272.
Rostaing, 273.
Schuberth, 274.
Smith 281.
Barnwell and Rollason, 289.
Manton and Islip, 297.
Clark (*Feldtrappe and Dutfoy*), 358.
Lake (*Watkins*), 430.
Newton (*Wurtz*), 434.
Fried, 450.

Composition, with flexible shanks;
Clark (*Mittler*), 411.

Covered or Florentine;
Sanders, 36.
Sanders, 38.
Dwyer, 39.
Tyndall, 40.
Church, 42.
Aingworth, 43.
Aston, 48.
Burrell, 48.
Elliott, 51.
Jaquin, 52.
Jefferies, 71.
Aingworth, 76.
Chatwin, 80.
Bridges, 82.
Aston and Elliott, 85.
Aingworth, 93.
Elliott, 95.

Buttons—*cont.*
  Covered or florentine—*cont.*
    Chatwin and Seymour, 99.
    Elliott, 102.
    Aston, 111.
    Boyle, 117.
    Rowley, 122.
    Bailey, 127.
    Williams, 132.
    Allen, 136.
    Aston, 140.
    Elliott, 143.
    MacEvoy, 156.
    Iliffe and Newman, 163.
    Iliffe, Newman, and Jenkins, 166.
    Smith, 179.
    Job and Tomlinson, 190.
    Chatwin and Chatwin, 197.
    Green, 202.
    Iliffe and Newman, 204.
    Aston and Brant, 217.
    Iliffe, 265.
    Clark (*Dupont*), 339.
    Aston, 349.
    Huddart, 350.
    Huddart, 351.
    Huskinson, 368.
    Huddart, 394.
    Newton (*Singer*), 396.
    Huddart, 428.
  Covering, fabrics for;
    Sanderson, 78.
    Moss, 79.
    Burke, 105.
    Rowley, 106.
    Jaquin, 161.
    Smith, 179.
    Hackett, 183.
    Job and Tomlinson, 190.
    Parkes, 193.
  Cutting out discs for;
    Elliott, 51.
    Rowley and Wakefield, 57.
    Bridges, 82.
    Iles, 112.
    Rowley, 122.
    Aston, 140.
    Fontainemoreau, 162.
    Frearson, 228.
    Baugh, 267.
    Scott, 274.
    Farmer, 411.
  "Cylindrical," spherical, &c.;
    Twigg, 145.
    Chatwin, 148.
    Iliffe, Newman, and Jenkins, 166.
    Brooman (*Jesson*), 324.
    Newton (*Labat*), 354.
    Turner (*Labat*), 399.
  Detachable from shanks;
    Chambers, Franklin, and Rowley, 73.
    Bridges, 82.
    Crosse, 179.

Buttons—*cont.*
  Drilling holes in;
    Rowley and Turner, 81.
    O'Neill, 169.
    Iliffe, 275.
    Haywood, 278.
  Fillings for;
    Cockings, 169.
  Four-hole, brace, and trouser;
    Barnett, 62.
    Jefferies, 71.
    Chambers, Franklin, and Rowley, 73.
    Smith, 77.
    Beater, 88.
    Newey and Newman, 96.
    Rowley, 106.
    Boyle, 117.
    Rowley, 122.
    Rowley, 128.
    Twigg, 145.
    O'Neill, 169.
    Green, 202.
    Jerome, 203.
    Iliffe and Newman, 204.
    Wright, 216.
    Edwards and Loveridge, 244.
    Parent, 250.
    Edwards, 251.
    Edwards, 267.
    Green and Cadbury, 313.
    Strawson, 356.
    Hinks and Newman, 363.
    Huskinson, 378.
    Turner (*Labat*), 399.
    Greaves, 416.
  Horn, or faced with horn;
    Ingram, 45.
    Ingram, 50.
    Mabley, 66.
    Parkes, 67.
    Harris, 70.
    Mabley, 97.
    Pope and Bufton, 164.
  Japanning and enamelling:
    Cooper, 13.
    Francis, 16.
    Jenkins, 119.
    De Serionne, 129.
    Gueyton, 265.
  Leather for boots, gaiters, &c.;
    Finch, 161.
    Finch, 173.
  "Leek";
    Moss, 79.
    Rowley, 122.
  Linen or "sewn through";
    Moss, 79.
    Elliott, 95.
    Newey and Newman, 96.
    Rowley, 106.
    Rowley, 122.
    Williams, 132.
    Allen, 136.

Buttons—*cont.*
 Linen or "sewn through"—*cont.*
  Empson, 139.
  Chatwin, 148.
  Iliffe and Newman, 163.
  Iliffe and Newman, 186.
  Jerome, 203.
  Cope, 236.
  Iliffe, 265.
  Green and Cadbury, 313.
  Player, 319.
  Green and Newman, 331.
  Huddart, 350.
  Huddart, 351.
  Hinks and Newman, 363.
  Huskinson, 368.
  Aston, 403.
  Aston, 421.
 Linen, forming holes in;
  Edwards, 260.
 "Maltese";
  Rowley, 133.
 Materials for;
  Whitehouse, 3.
  Clay, 3.
  Eginton, 15.
  Clay, 18.
  Westwood, 19.
  Rabone, 20.
  Clay, 27.
  Berry, 53.
  Prosser, 61.
  Aingworth, 76.
  Aingworth, 93.
  Sheldon, 94.
  Newey and Newman, 96.
  Elliott, 102.
  Lutwyche, 110.
  De Serionne, 129.
  Souter and Worton, 142.
  Duméry, 157.
  Cope, 201.
  Wright, 216.
  Pidding, 235.
  Schuberth, 247.
  Wright (*Shaw*), 277.
  Edwards and Iliffe, 289.
  Ghislin, 307.
  Bethell, 318.
  Green and Newman, 331.
  Clark (*Hautecloque*), 340.
  Huddart, 350.
  Huddart, 351.
  Clark (*Feldtrappe and Dutfoy*), 358.
  Ghislin, 385.
  Lund, 388.
  Lund, 405.
  Gedge (*Salvy*), 443.
  Gedge (*Salvy*), 454.
 Metal;
  Maundrell and Williams, 1.
  Smith, 2.
  Williams, 3.
  Collins, 3.
  Bell, 4.

Buttons—*cont.*
 Metal—*cont.*
  Alston, 14.
  Francis, 16.
  Ashton, 17.
  Hickman, 20.
  Alston, 21.
  Deykin and Deykin, 38.
  Tyndall, 40.
  Jefferies, 49.
  Rowley and Turner, 81.
  Braithwaite, 99.
  Hancock, 117.
  Rowley, 122.
  Williams, 132.
  Twigg, 145.
  Glover, 156.
  Iliffe and Newman, 163.
  Rose, 174.
  Frearson, 178.
  Scott, 199.
  Frearson, 228.
  Haywood, 278.
  Huddart, 351.
  Taylor, 351.
  Gengembre, 381.
  Maurice (*Hayem*), 382.
  Davies (*Reed*), 402.
  Davies (*Reed*), 415.
  Huddart, 417.
  Huddart, 428.
  Bousfield (*Palmer*), 433.
  Phillips, 437.
 Moulded, cast, or stamped;
  Alston, 14.
  Hickman, 20.
  Alston, 21.
  Ingram, 45.
  Holmes, 54.
  Ingram, 50.
  Prosser, 61.
  Harris, 70.
  Aingworth, 93.
  Sheldon, 94.
  Mabley, 97.
  Rowley, 106.
  Lutwyche, 110.
  Kenrick, 114.
  Iles, 126.
  De Serionne, 129.
  Souter and Worton, 142.
  Hewson, 149.
  Duméry, 157.
  Fontainemoreau, 162.
  Iliffe and Newman, 163.
  Quiquandon, 180.
  Parent, 188.
  Newton (*Bapterosses*), 220.
  Delon, 226.
  Pidding, 235.
  Hess, 252.
  Patrick, 263.
  Smith, 272.
  Schuberth, 274.
  Wright (*Shaw*), 277.
  Smith, 281.
  Barnwell and Rollason, 289.

Buttons—*cont.*

- Moulded, cast, or stamped—*cont.*
  - Manton and Islip, 297.
  - Bethell, 318.
  - Davenport and Cole, 326.
  - Clark (*Hautecloque*), 340.
  - Boubée, 355.
  - Clark (*Feldtrappe and Dutfoy*), 358.
  - Wild and Randel, 361.
- Ornamenting, colouring, &c ;
  - Rose, 21.
  - Harris, 70.
  - Moss, 79.
  - Aingworth, 93.
  - Aston, 111.
  - Rowley, 122.
  - Newey and Newman, 129.
  - Williams, 132.
  - Iliffe, Newman, and Jenkins, 166.
  - Chatwin, 197.
  - Jerome, 203.
  - Barratt, 214.
  - Wright, 216.
  - Empson, 240.
  - Lee, 243.
  - Edwards, 251.
  - Hall and Dutson, 253.
  - Gilbert, 297.
  - Wilkinson, 329.
  - Green and Newman, 331.
  - Aston, 349.
  - Edwards, 358.
  - Clark (*Mittler*), 411.
- Preparing for sale ; *See* Carding.
- Protecting the thread by a neck on the button or shank ;
  - Barnett, 51.
  - Barsham, 69.
  - Doherty, 242.
  - Iliffe, 275.
- Rotating or rocking on the shank ;
  - Brough, 249.
  - Scott, 274.
  - Johnson (*Meacham*), 311.
  - Strawson, 356.
  - Dean, 386.
  - Edkins, Newman, and Greaves, 424.
- Rounding and smoothing edges, holes, &c. of ;
  - Rowley, 57.
  - Twigg, 145.
  - Duméry, 157.
- Shanks, elastic ;
  - Allport, 147.
  - Mosley, 184.
- Shanks, flexible ;
  - Sanders, 38.
  - Aingworth, 43.
  - Aingworth, 76.

Buttons—*cont.*

- Shanks, flexible—*cont.*
  - Elliott, 102.
  - Rowley, 128.
  - Mac Evoy, 156.
  - Griffin and Duley, 207.
- Shanks, flexible, combined with metal ;
  - Elliott, 102.
- Shanks, "loose in the back of the button ;"
  - Nutting, 346.
  - Edwards, 353.
- Shanks (metallic), covered with fabric ;
  - Sassé (*Renard*), 394.
- Shanks (metallic), "level or nearly level with the back" of the button ;
  - Edwards and Wright, 270.
- Shanks (metallic), making, fixing to button-heads, &c. ;
  - Clay, 3.
  - Ashton, 17.
  - Whitmore, 29.
  - Heaton, 32.
  - Tyndall, 40.
  - Church, 42.
  - Holmes, 47.
  - Jefferies, 49.
  - Hawkins (*Van Esschen*), 63.
  - Chambers, Franklin, and Rowley, 73.
  - Aingworth, 76.
  - Moss, 79.
  - Beater, 88.
  - Rowley, 106.
  - Williams, 132.
  - Goode, Boland, and Newman, 138.
  - Rogers, 147.
  - Allport, 147.
  - Pope and Bufton, 164.
  - Cockings, 169.
  - Iliffe and Brough, 171.
  - Turner, 196.
  - Munt, 227.
  - Scott, 274.
  - Hughes, 283.
  - Gengembre, (*Palmer*), 433.
  - Phillips, 437.
- Shanks of coiled wire ;
  - Harding, 131.
  - Newton (*Kuplenschmidt*), 304.
- Shanks of gutta percha or india-rubber ;
  - Cox, 171.
  - Mosley, 184.
- Shanks of hollow wire ;
  - Cockings, 169.
- Shanks, **S**-shaped, serving as "buttons, studs, and solitaires ;"
  - Wright, 421.

Buttons—*cont.*
- Shanks, U-shaped, "to regulate axially the position of buttons;"
  - Huddart, 459.
- Shanks, "with a probe" therein;
  - Charles, 383.
- Shanks, with a screw thread on the outer end;
  - MacClenahan, 437.
- Spring;
  - Hobdell, 120.
  - Rogers, 147.
  - Landsberg, 276.
  - Champion, 345.
- Stamped; *see* Moulded.
- Trouser; *see* Four-hole.
- With only two holes and a groove on the upper surface;
  - Prosser, 61.
  - Frearson, 178.
- With two shanks;
  - Barnett, 34.
- "Wholly of wire;"
  - Beater, 88.
  - Farmer, 392.

Cameos, imitation:
- Ghislin, 385.
- Taylor, 446.

Carding or preparing for sale buttons, hooks and eyes, &c.:
- Iles, 109.
- Mac Evoy, 116.
- Iles, 124.
- Dore, 189.
- Newey and Newey, 238.
- Vigurs, 278.
- Henry (*Gingembre et Damiron*), 334.
- Phillips, 437.

Chains:
- Fastenings for;
  - Clark (*Fauche and Ravaut*), 332.
  - Taylor, 352.
  - Johnson (*Thiercelin*), 460.
- "For ornamenting ladies' hats;"
  - Taylor, 446.
- Making;
  - Whitehouse, 3.
  - Mackenzie, 29.
  - Goode, Boland, and Newman, 138.
  - Farmer, 208.
  - Taylor, 212.
  - Haseltine, 234.
  - Burn, 237.
  - Haseltine (*Perry*), 257.
  - Lancelott, 287.

Chains—*cont.*
- Making—*cont.*
  - Lancelott, 339.
  - Lancelott, 343.
  - Buffoni, 394.
  - Bousfield (*Towne*), 404.
  - Wolverson, 412.
  - Béziel, 420.
  - Giuliano, 426.
  - Hollands, 431.
  - Jenks, 440.
- Materials for;
  - Ryland, 183.
  - Speight, 232.

Clasps, snaps, &c.: *See also* Belt and band fastenings; Buckles; Slides.
- Making;
  - Braithwaite, 99.
  - Rowley, 128.
  - Kosmann, 141.
  - Twigg, 145.
  - Sanguinède, 154.
  - Walsh and Brierley, 186.
  - Brough, 189.
  - Pilliner, 203.
  - Jenkins, 212.
  - Edridge, 217.
  - Bent, 254.
  - Jones, 256.
  - Newman, 265.
  - Bent and Luckock, 292.
  - Brough and Kilby, 295.
  - Lingham and Nicklin, 299.
  - Brierley, 302.
  - Westbury and Cooke, 308.
  - Weston, 309.
  - Paterson, 312.
  - Jones, 320.
  - Smith, 325.
  - Brierley, 330.
  - Clark (*Fauche and Ravaut*), 332.
  - Brierley, 335.
  - Wilson, 342.
  - Richards, 347.
  - Brierley and Greenwood, 360.
  - Stanley, 363.
  - Hannart, 370.
  - Brierley, 377.
  - Winkles, 381.
  - Law, 387.
  - Taylor, 400.
  - Gordon, 408.
  - Heaven, 416.
  - Taylor, 446.
  - Reading, J., S. A., G. E., and F. F., 449.
  - Newey, 455.
  - Newey, 460.
  - Johnson (*Thiercelin*), 460.
- Substitute for;
  - Reading, 100.

Clasps—*cont.*
- With spring tongues;
  - Rodgers, 56.
  - Paterson, 231.
  - Dadley and Brough, 241.
  - Parsons, 392.

Clog and patten fastenings:
- Tylee, 27.
- Hancock, 37.
- MacEvoy, 69.
- Stocker and Heeley, 72.
- Frearson, 83.
- Bailey, 127.

Coat links:
- Newey and Newman, 96.
- Cooper, 124.
- Goode, Boland, and Newman, 138.
- Hackett, 176.
- Reading, 449.

Collar and shirt fasteners: *See also* Studs.
- Bailey, 127.
- Bradshaw, 135.
- Chartraire, 184.
- Marsden, 211.
- Aberdein, 227.
- Heleman, 419.

"Comb or ornament for the back of the head:"
- Brooman (*Delebarre*), 406.

"Composition" jewellery:
- Lepage, 192.
- Smith, 271.
- Smith, 284.
- Ghislin, 307.
- Littlehales, 330.
- Hands and Holland, 348.
- Boubée, 355.
- Wild and Randel, 361.
- Newton (*Wurtz*), 434.

Coral, artificial:
- Isaacs, 182.
- Spence, 224.
- Rostaing, 273.
- Lake (*Marquard*), 439.

Corset fastenings: *See* Stay fastenings.

Covering fabrics for buttons: *See* Buttons.

Crinoline clips, fasteners, &c.:
- Dance, 314.
- Stevens, 322.
- Coathupe, 333.
- Fletcher, 334.
- Hickman, 336.

Crinoline clips, fasteners, &c. —*cont.*
- Kinnings, Gibbs, and Edwards, 390.
- Farmer, 411.
- Newey, 455.

Cuff fasteners: *See* Gloves.

Cutting facets on brooches, &c., made of papier mâché:
- Davenport and Cole, 221.

Cutting, grinding, and polishing precious stones: *See* Grinding, &c.

Dress bodies, fastenings for:
- Masters, 121.
- Organ and Pitt, 183.

Dress-holders and suspenders, including hooks for suspending garments:
- Smith, 110.
- Newton (*Dyormet*), 238.
- Badcock, 245.
- Bouché, 253.
- Wright (*Bresson*), 266.
- Mennons (*Mangin*), 269.
- Landsberg, 319.
- Edkins, 320.
- Taylor and Edkins, 323.
- MacDougall and Crane, 328.
- Tent, 366.
- Montleart and Tent, 367.
- Rowlett, 370.
- Green and Mason, 374.
- Edwards, 387.
- Williams and Fraser, 391.
- Bonneville (*Doudet*), 424.
- Newton (*Changeur*), 434.
- Whittaker, 451.

Dress pins: *See* Breast pins.

Earrings:
- For ears not pierced;
  - Lees, 282.
  - Searle, 456.
- Making;
  - Taylor, 135.
  - Kosmann, 141.
  - Ryland, 192.
  - Littlehales, 330.
  - Hands and Holland, 348.
  - Lund, 388.
  - Lund, 405.
  - Searle, 456.
- Ornamenting;
  - Buller, 270.
  - Clark (*Bouret and Ferré*), 293.

- Enamel, substitute for, in articles of jewellery:
  - Emanuel, 335.
  - Lake (*Marquard*), 439.
- Eyelets, making:
  - Frearson, 228.
  - Pursall, 232.
  - Parkes, 241.
  - Wright and Wright, 245.
  - Norton, 310.
  - Thurel, 316.
  - Huskinson, 378.
  - Newton (*Harlem and Payne*), 422.
  - Bousfield (*Garrick*), 443.
  - Bousfield (*Garrick*), 453.
- Eyes: *See* Hooks and eyes.
- Fastenings for garments generally:
  - Cooper, 145.
- Flower-holders:
  - Dixon and Pumphrey, 366.
- Garter fastenings:
  - Hall, 34.
  - Rowley, 128.
  - Bradshaw, 135.
  - Brough, 177.
  - Taylor, 212.
  - Mill, 218.
  - Dadley and Brough, 241.
  - Scheidel (*Gouda*), 252.
  - Bent, 254.
  - Carpenter, 286.
  - Clark (*Cousin and Duval*), 294.
  - Brough and Kilby, 295.
  - Lingham and Nicklin, 299.
  - Taylor, 299.
  - Westbury and Cooke, 308.
  - Paterson, 312.
  - Clark, 337.
  - Ashwin, 367.
  - Law, 387.
  - Reading, J., S. A., G. E., and F. F., 449.
  - Spring;
    - Philippe, 9.
- Glove and cuff fastenings:
  - Falconer, 78.
  - Smith, 86.
  - Mills, 87.
  - Beater, 88.
  - Benbow, 104.
  - Rowley, 106.
  - Bailey, 127.
  - Bradshaw, 135.
  - Glover, 156.
  - Carpenter, 180.
- Glove and cuff fastenings—*cont.*
  - Chartraire, 184.
  - Mill, 218.
  - Old and Pendleton, 246.
  - Carpenter, 286.
  - Thurel, 316.
  - Janvier, 319.
  - Lepeinteur, 323.
  - Coathupe, 333.
  - Hannart, 370.
  - Blackburn, 371.
  - Law, 387.
  - Bussey, 397.
  - White and Chamberlain, 425.
  - Field, 447.
- Grinding, polishing, &c., pearl, precious stones, buttons, &c.:
  - Johnson (*Tamisier*), 349.
  - Johnson (*Tamisier*), 362.
  - Edwards, 374.
  - Phillips, 437.
  - Bond, Bussell, and Fisher, 442.
- Gutta percha jewellery, buttons, &c.: *See* India-rubber.
- Hat-band buckles: *See* Buckles.
- Hooks and eyes:
  - Carding, packing, &c.; *See* Carding.
  - Coating, enamelling, &c.;
    - Jenkins, 119.
    - Cornforth, 191.
  - Making;
    - Rodgers, 56.
    - Barnett, 62.
    - Church, 64.
    - Pumphrey, 66.
    - Stocker and Heeley, 72.
    - Chambers, Franklin, and Rowley, 73.
    - Smith, 77.
    - Moss, 79.
    - Frearson, 83.
    - Wardroper, 91.
    - Newey and Newman, 96.
    - Benbow, 104.
    - Smith, 110.
    - MacEvoy, 116.
    - Bailey, 127.
    - Harding, 131.
    - Taylor, 135.
    - Frearson, 150.
    - Newey, 162.
    - Organ and Pitt, 183.

Hooks and eyes—*cont.*
- Making—*cont.*
  - Newman and Whittle, 195.
  - Barnett, 223.
  - Parnell, 230.
  - Newey and Newey, 238.
  - Meall, 243.
  - Old and Pendleton, 246.
  - Nicholls and Walker, 247.
  - Lewis, 247.
  - Frearson, 261.
  - Hinks and Wells, 266.
  - Newman, 285.
  - Trotman, 286.
  - Farmer, 298.
  - Newton (*Mason and Smith*), 303.
  - Emes, 307.
  - Emes, 318.
  - Edwards, 387.
  - Law, 387.
- Substitutes for;
  - Beater, 88.
  - Reading, 100.
  - Smith, 110.
  - Jenkins, 119.
  - Rowley, 128.
  - Newey, 160.
  - Rowley, 167.
  - Rowlands, 170.
  - Hipkiss, 173.
  - Grant, 179.
  - Newey and Newey, 238.
  - Old and Pendleton, 246.
  - Barrow, 258.
  - Hinks and Wells, 266.
  - Davey, 282.
  - Emes, 307.
  - Emes, 318.
  - Ashwin, 367.
  - Cutler, 368.
  - Barnes, 385.
  - Law, 387.
  - Heaven, 416.

India-rubber or gutta percha jewellery, buttons, &c.:
- Hancock, 108.
- Brockedon and Hancock, 118.
- Newton (*Goodyear*), 137.
- Duthoit, 144.
- Johnson, 185.
- Nicholls, 188.
- Clark (*Hauteclogue*), 340.
- Lake (*Marquard*), 439.
- Gedge (*Salvy*), 443.
- Taylor, 446.

Jet, imitation for dress ornaments:
- Ryland, 192.

Jewellery not otherwise indexed:
- Berry, 53.
- Johnson (*Payen*), 173.
- Neale and Dawson, 185.
- Newey, 238.
- Lee, 243.
- Toussaint, 260.
- Gueyton, 265.
- Barre and Barre, 268.
- Smith, 271.
- Smith, 284.
- Barnwell and Rollason, 289.
- Lingard, 315.
- Wilkinson, 329.
- Morris, Weare, and Monckton, 338.
- Boubée, 355.
- Jourdin, 359.
- Wild and Randel, 361.
- Goll, 364.
- Woodbury, 398.
- Ludwig, 401.
- Emanuel, 420.
- Newton (*Wurtz*), 434.
- Woodbury, 442.
- Spiquel and Florange, 446.

Joints or hinges for brooch pins: *See* Brooches.

Jump fastenings: *See* Stay fastenings.

"Lacing without eyelet holes," fastening for;
- Durafour, 119.

Leek buttons: *See* Buttons.

Links for coats: *See* Coat links.

Lockets:
- "Bows or handles" for;
  - Benson, 230.
- Joints or hinges for;
  - Haseler, 303.
  - Haseler, 310.
  - Haseler, 321.
- Making;
  - Whitehouse, 3.
  - Haseler, 321.
  - Haseler, 337.
- With space for stamps, hair, scent, &c.;
  - Dawson and Avery, 259.
  - Kain, 364.
  - Perry, 461.
  - Vaughton, 462.
- With reversible ornaments;
  - Tubino, 459.

"Maltese" buttons: *See* Buttons.

Moulds for casting, stamping, &c. buttons, studs, &c.: *See* Buttons (moulded).

Necklaces or necklets:
  Making;
    Whitehouse, 3.
    Ryland, 183.
    Béziel, 420.
    Giuliano, 426.
  Methods of fastening;
    Long, 219.
    Friedmann, 250.
    Winkles, 381.
    Gordon, 408.
    Johnson (*Thiercelin*), 460.

Parasol holders:
  Green, 202.
  Couchman, 361.
  Couchman, 369.

Patten fastenings: *See* Clog and patten fastenings.

Pearl, imitation:
  Lake (*Marquard*), 439.
  Parkes, 457.

Polishing precious stones, &c.: *See* Grinding.

Preventing robbery or loss from the person:
  Cartwright, 1.
  Chater, 13.
  Pickering, 22.
  Bell, 33.
  Brown, 35.
  Hancock, 37.
  Smith, 77.
  Nicoll, 115.
  Bailey, 127.
  Kosmann, 141.
  Stewart, 174.
  North, 176.
  Clements, 189.
  Gaudibert, 193.
  Carter, 194.
  Newton, 201.
  Bannister, 222.
  Mair, 225.
  Benson, 230.
  Forrester, 231.
  Smith, 232.
  De Landfort, 233.
  Newey and Newey, 238.
  Ash, 240.
  Lyons, 255.

Preventing robbery or loss from the person—*cont.*
  Walker, 284.
  Speight, 285.
  Orenstein, 302.
  Wilkinson, 311.
  Godfrey, 328.
  Oram, 332.
  Parfitt, 335.
  Comfort, 343.
  Edge, 346.
  Andoe, 376.
  Burgess, 396.
  Sheppard, 404.
  Singer, 409.
  Anderson and Durant, 426.
  Gottheimer, 435.
  Jones, 440.
  Macintosh and Boggett, 445.
  Towers, Clutterbuck, and Muschamp, 447.
  Dromtra (*Neuscheller*), 456.

Rings for the fingers, for fastening neckties, &c.:
  Whitehouse, 3.
  Reading, 198.
  Fontainemoreau, 224.
  Clark (*Bouret and Ferré*), 293.
  Johnson (*Hayem*), 304.
  Rhind, 311.
  Paterson, 312.
  Aron, 324.
  Bettle, 371.
  Brown, 375.
  Eades, 377.
  Reading, 383.
  Buffoni, 394.
  Reading, 428.

Safety pins:
  Rowley, 128.
  Taylor, 135.
  Rowley, 167.
  Edridge, 219.
  Taylor, 299.

Safety pockets: *See* Preventing robbery, &c.

Scent bottles, caps for:
  Miles, 427.

Seals, watch keys, &c:
  Dawson and Avery, 259.
  Barre and Barre, 268.
  Macintosh and Boggett, 445.

Setting precious stones, &c.:
  Smith, 2.
  Sheldon, 276.
  Clark (*Bouret and Ferré*) 293.

Setting precious stones, &c.—*cont.*
- Emanuel, 335.
- Goll, 364.
- Ludwig, 401.

Shanks: *See* Buttons.

Shawl and cloak pins and fasteners:
- Rowley, 106.
- Rowley, 128.
- Jenkins, 151.
- Edridge, 217.
- Taylor, 446.
- Reading, 449.

Shirt buttons: *See* Buttons.

Shoe buckles: *See* Buckles.

Sleeve links and solitaires:
- Hobdell, 120.
- Beaver, 248.
- Buller, 270.
- Watson, 325.
- Lane, 356.
- Atkins, 380.
- Winkles, 387.
- Lund, 388.
- Parsons, 392.
- Blackham, 406.
- Richards, 407.
- Jenkins, 414.
- Lilly and Sunderland, 424.
- Reading, J., S. A., G. E., and F. F., 428.
- Richards, 458.

Sleeve ties or fasteners for short sleeves:
- Greenfield, 264.
- Cross, 317.
- Walsham, 338.

Snaps: *See* Clasps.

Solitaires: *See* Sleeve links, &c.

Springs:
- Clips and other fastenings (not buckles) for boots and shoes;
  - Philippe, 9.
  - Guest, 30.
  - Adams, 32.
  - Coathupe, 333.
- For hat and watch guards;
  - Taylor, 212.
- "For trouser-bearers;"
  - Masters, 121.

Stay fastenings:
- Proudfoot, 5.
- Philippe, 9.
- Thomas, 90.
- Benbow, 104.
- Smith, 110.
- Durafour, 119.
- Cooper, 124.
- Godding, 194.
- Wright and Wright, 245.
- Hill, 270.
- Clark (*Cousin and Duval*), 294.
- Clements, 325.
- Hannart, 370.
- Singer, 409.
- Hartley, 418.
- Reading, 449.

Stock and necktie fasteners:
- Chambers, Franklin, and Rowley, 73.
- Empson, 91.
- Reading, 100.
- Bradshaw, 135.
- Couchman, 382.

Studs:
- Consisting of two (sometimes three) separate parts;
  - Rowley, 133.
  - Kosmann, 141.
  - Valda, 255.
  - Valda, 262.
  - Wright, 264.
  - Powell, 279.
  - Zysel, 290.
  - Bailey, 328.
  - Atkinson, 346.
  - Taylor, 351.
  - Lane, 356.
  - Atkinson, 360.
  - Helcman, 419.
  - Dahis, 433.
  - Hayem, 451.
- For boots and shoes;
  - Moore, 216.
  - Bussey, 397.
- Making;
  - Smith, 2.
  - Whitehouse, 3.
  - Aingworth, 76.
  - Souter and Worton, 142.
  - Rascol, 190.
  - Buller, 270.
  - Davey, 282.
  - Taylor, 351.
  - Maurice (***Hayem***), 382.
  - Lund, 388.
  - Lund, 405.
  - Blackham, 406.
  - Allies, 436.
  - MacClenahan, 437.
  - Gedge (***Saley***), 443.
  - Ashton, 450.

Studs—*cont.*
- **Making**—*cont.*
  - Hayem, 451.
  - Gedge (*Salvy*), 454.
- Ornamenting;
  - Newey and Newman, 129.
- Securing in shirt fronts;
  - Rowley, 133.
  - Taylor, 135.
  - Watson, 325.
  - Searle, 408.
- Spring;
  - Hobdell, 120.
  - Rogers, 147.
  - Landsberg, 276.
  - Parsons, 392.
- With "spring shanks,";
  - Rowley, 167.
  - Valda, 255.
  - Valda, 262.
  - Zysel, 290.
  - Helcman, 419.

Swivels and swivel rings:
- Goode, Boland, and Newman, 138.
- Lysnar, 154.
- Reading, 198.
- Lees, 282.
- Reading, 301.
- Smith, 301.
- Gill, 308.
- Ellis, 333.
- Reading, 383.
- Bonneville (*Hachin*), 389.
- Welch, 426.
- Morin and Schweiger, 432.

Tags for laces:
- Unsworth, 61.
- Smith, 77.
- Moss, 79.
- Hollingsworth, 171.
- Potts, 206.
- Marsden ,211.
- Booth and Booth, 256.

Tortoiseshell, imitation for dress ornaments:
- Rylands, 192.

Trouser-front fastenings:
- Rowley, 106.

Trouser-strap fastenings:
- Sabberton, 60.
- Barnett, 62.
- MacEvoy, 69.
- Chambers, Franklin, and Rowley, 73.
- Smith, 77.
- Falconer, 78.
- Frearson, 83.
- Beater, 88.
- Thomas, 90.
- Empson, 91.
- Newey and Newman, 96.
- Reading, 100.
- Rowley, 106.
- Cooper, 124.
- Bailey, 127.
- Ashton, 450.

Varnishing or lacquering buckles and buttons:
- Tutin, 2.
- Edwards and Loveridge, 244.

Veil protectors
- Boubée, 345.

Vulcanite jewellery, buttons, &c.: *See* India Rubber.

Vulcanizing dress fastenings and ornaments:
- Brockedon and Hancock, 113.
- Newton (*Goodyear*), 137.

Watch protectors: *See* Preventing Robbery.

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——— (*Portico Library, Mosley Street*).
——— (*Rochdale Road Branch Free Library*).
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Mansfield (*Co-operative Industrial Society*).
——— (*Mechanics', Artizans', and Apprentices' Library*).
——— (*Mechanics' Institute*).
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——— (*Working Men's Hall*).
Melksham (*Mutual Improvement Society*).
Melton Mowbray (*Literary Institute*).
Mere, near Bath (*Literary Association*).
Middlesborough (*Iron and Steel Institute*).
——— (*Mechanics' Institution*).
Middlewich (*Literary and Scientific Institution*).
Modbury (*Mechanics' Institution*).
Mossley (*Mechanics' Institute*).
Newark (*Mechanics' Institute*).
Newbury (*Literary and Scientific Institution*).
Newcastle-upon-Tyne (*Mechanics' Institution*).
——— (*Working Men's Club*).
New Mills, near Stockport (*Mechanics' Institute*).
Newport, Isle of Wight (*Young Men's Society and Reading Room*).
Northampton (*Mechanics' Institute*).
North Shields (*Free Library*).
Nottingham (*Mechanics' Institution*).
——— (*Subscription Library Bromley House*).
Oldham (*Mechanics' Institution, Werneth*).
Ormskirk (*Public Library*).
Oswestry (*Institute*).
Over, Cheshire (*Working Men's Institute*).
Oxford (*North Oxford Working Men's Club*).
Patricroft (*Mechanics' Institution*).
Pembroke Dock (*Mechanics' Institute*).
Pendleton (*Mechanics' Institution*).

Penzance (*Institute*).
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——— (*Working Men's Association*).
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Salford (*Working Men's Club*).
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Skipton, Yorkshire (*Mechanics' Institute*).
Slough (*Mechanics' Institute*).
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Southampton (*Polytechnic Institution*).
——— (*Workmen's Hall*).
Southport (*Athenæum*).
South Shields (*Public Free Library*).
Southwell (*Literary Institution*).
Spalding (*Christian Young Men's Association*).
——— (*Mechanics' Institute*).
Stafford (*Mechanics' Institution*).
Staines (*Literary and Scientific Institution*).
——— (*Mechanics' Institute and Reading Room*).
Stalybridge, Cheshire (*Mechanics' Institution*).
Stamford (*Institution*).
Stourbridge (*Associated Institute*).
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Sunderland (*Working Men's Club*).
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——— (*Royal Institution of Cornwall*).
Tunbridge (*Literary and Scientific Institute*).
——— (*Mechanics' Institute.*)
Tunbridge Wells (*Mechanics' Institution*).
——— (*Society of Literature and Science*).
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Tynemouth (*Free Public Library*).
Ulverston (*Temperance Hall*).
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Walsall (*Free Library*).
Walsham-le-Willows, Suffolk (*Institute*).
Ware (*Institute*).
Warminster (*Athenæum*).
Watford (*Literary Institute*).
——— (*Public Library*).
Wellingborough (*Working Men's Club*).
Wellington (*Young Men's Christian Association*).
Wells, Somerset (*Young Men's Society*).
West Bromwich (*Free Library*).
Whaleybridge (*Mechanics' Institute*).
Whitby (*Institute*).
——— (*Museum*).
——— (*Subscription Library*).
Whitehaven (*Mechanics' Institute*).
——— (*Working Men's Reading Room*).

Whitstable (*Institute*).
Wilton (*Literary Institute*).
Winchester (*Mechanics' Institution*).
——— (*Training College*).
Winsford (*Town Hall Reading Room*).
Wirksworth (*Mechanics' Institution*).
Wisbeach (*Mechanics' Institute*).
Witham (*Literary Institution*).
Witney (*Athenæum*).
Wolverhampton (*Law Library*).
——— (*Library*).
Wolverton (*Institute*).
Woodbridge (*Literary and Mechanics' Institute*).
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The following is a KEY to the classes already published. The numbers refer to the list of Abridgments on pages 3, 4, 5, and 6, where the full titles, prices, &c., are given :—

A.

Accordions. *See* Music, &c., 26.
Accoutrements. *See* Fire-arms, &c., 10.
Acetic acid. *See* Acids, 40.
Acids, &c., 40.
Aerating water. *See* Purifying, &c., water, 79.
Aeronautics, 41.
Agricultural engines. *See* Steam engine, 49.
Agriculture, steam. *See* Steam culture, 8.
Air, &c., engines, 62.
Air guns. *See* Fire-arms, 10.
Air pumps of steam engines. *See* Steam engine, 49.
Alarum clocks. *See* Watches, &c., 9.
Alarums, electric. *See* Electricity, 15.
Alarums, gas. *See* Gas, 17.
Albums. *See* Photography, 19; Books, 43.
Alkalies. *See* Acids, &c., 40.
Alloys. *See* Metals, &c., 18.
Alum. *See* Acids, &c., 40.
Alumina. *See* Acids, &c., 40.
Aluminium. *See* Metals, &c., 18; Acids, &c., 40.
Amalgamating metals. *See* Metals, &c., 18.
Ambulances. *See* Medicine, &c., 25.
Ammonia. *See* Acids, &c., 40.
Ammonium. *See* Acids, &c., 40.
Ammunition. *See* Fire-arms, &c., 10.
Anchors, 69.
Anemometers. *See* Optical, &c., 76.
Annealing furnaces. *See* Fuel, 30.
Anthracite furnaces. *See* Fuel, 30.
Antimony. *See* Metals, &c., 18; Acids, &c., 40.
Aqueducts. *See* Bridges, &c., 36.
Arches. *See* Bridges, 36.
Armour plates, rolling. *See* Iron and Steel, 6.
Armour plates, shaping. *See* Ship-building, 21.
Arsenic. *See* Metals, &c., 18; Acids, &c., 40.
Arsenic acid and arsenious acid. *See* Acids, 40.
Artificial leather, 80.
Artists' instruments, &c., 54.
Asphalte. *See* Roads, &c., 35.
Astronomical instruments. *See* Optical, &c., 76.
Axles, axletrees, and axle-boxes, for railway carriages, &c., *See* Carriages for railways, 46; Steam engine, 49.

B.

Bagatelle tables. *See* Toys, &c., 51.
Balances. *See* Raising, &c., 31.
Balancing, &c. millstones. *See* Grinding grain, 78.
Balloons. *See* Aeronautics, 41.
Balloons, toy. *See* Toys, 51.
Balls. *See* Toys, 51.
Bands and belts. *See* Wearing apparel, 66.
Barium. *See* Acids, &c., 40.
Barley mills. *See* Grinding grain, 78.
Barometers. *See* Optical, &c., 76.
Barrels, 74.
Baryta. *See* Acids, &c., 40.
Baths for medical use. *See* Medicine, &c., 25.
Bayonets. *See* Fire-arms, &c., 10.
Beacons. *See* Harbours, &c., 77.
Beads. *See* Wearing apparel, 68.
Beds and bedsteads. *See* Furniture, 39.
Beds and bedsteads for invalids. *See* Medicine, &c., 25; Furniture, 39.
Beer engines. *See* Hydraulics, 32.
Bellows. *See* Fuel, 30.
Bells. *See* Music, &c., 26.
Belts, surgical, *See* Medicine, &c., 25.
Billiards. *See* Toys, &c., 51.
Biscuits. *See* Cooking, 61.
Biscuit ware. *See* Pottery, 24.
Bismuth. *See* Acids, &c., 40.
Bits. *See* Saddlery, 34.
Blacking. *See* Skins, &c., 55; Wearing apparel, 67.
Blast furnaces. *See* Iron and steel, 6; Fuel, 30.
Bleaching, &c., fabrics, 14.
Bleaching fibrous substances. *See* Paper 11; Spinning, 28.
Blinds. *See* Furniture, 39.
Blinds, ventilating. *See* Ventilation, 52.
Blocks. *See* Raising &c., 31.
Boas. *See* Wearing apparel, 66.
Boat-building. *See* Ship-building, 21.
Boats, raising and lowering. *See* Raising, &c., 31; Masts, &c., 73.
Boiler plates. *See* Iron and steel, 6.
Boiler tubes. *See* Metallic pipes, 70.
Boilers of steam engines. *See* Steam engine, 49.
Bolting, &c., flour. *See* Grinding grain, 78.
Bolts. *See* Locks, &c., 60.
Bolts. *See* Nails, &c., 58.
Bonnets and bonnet boxes. *See* Wearing apparel, 65.
Books, &c., 43.
Boot-cleaning machines. *See* Brushing, 57.
Boot hooks. *See* Wearing apparel, 67.
Boot jacks. *See* Wearing apparel, 67.
Boots. *See* Wearing apparel, 67.
Boracic acid. *See* Acids, 40.

Bottling. *See* Preparing, &c., cork, &c., 56.
Boxes for pens, leads, &c. *See* Writing, 37.
Bracelets. *See* Wearing apparel, 68.
Braces. *See* Wearing apparel, 66.
Braid. *See* Lace, &c., 29.
Brakes. *See* Carriages for railways, 46; Steam-engine, 49; Mining, 71.
Brass. *See* Metals, &c., 18.
Bread-making. *See* Cooking, &c., 61.
Breakwaters. *See* Harbours, &c., 77.
Breast pins. *See* Wearing apparel, 68.
Breast-plates. *See* Fire-arms, &c., 10.
Breeches. *See* Wearing apparel, 66.
Bricks and tiles, 22.
Bricks, ventilating. *See* Ventilation, 52.
Bridges, &c., 36.
Bromine. *See* Acids, &c., 40.
Brooches. *See* Wearing apparel, 68.
Brushes for artists. *See* Artists' instruments, 54; Brushing, 57.
Brushing, &c., 57.
Buckles. *See* Wearing apparel, 68.
Buffers. *See* Carriages, &c., for railways, 46.
Bugles. *See* Music, &c., 26.
Bullet-making machines. *See* Fire-arms, &c., 10.
Bungs. *See* Preparing and cutting cork, 56.
Buoys. *See* Harbours, &c., 77.
Bustles. *See* Wearing apparel, 66.
Buttons. *See* Wearing apparel, 68.

C.

Cable stoppers. *See* Raising, &c., 31.
Cables, telegraphic. *See* Electricity, 15.
Cadmium, *See* Acids, &c., 40.
Cages, miners' safety. *See* Mining, 71.
Caissons. *See* Harbours, &c., 77.
Calcining furnaces. *See* Metals, &c., 18; Fuel, 30.
Calcium. *See* Acids, &c., 40.
Calculating machines. *See* Optical, &c., 76.
Cameras. *See* Photography, 19; Optical, &c., 76.
Canal navigation. *See* Marine propulsion, 5.
Canals. *See* Harbours, &c., 77.
Candles. *See* Oils, &c., 27.
Candlesticks. *See* Lamps, &c., 44.
Cannon. *See* Fire-arms, 10.
Canvas. *See* Weaving, 20.
Capes. *See* Wearing Apparel, 66.
Caps and cap fronts. *See* Wearing apparel, 65.
Caps and capsules. *See* Preparing and cutting cork, 56.
Capstans. *See* Raising, &c., 31.
Carbon. *See* Acids, &c., 40.
Carbonic acid. *See* Acids, 40.
Cardboard. *See* Paper, 11.
Card cases. *See* Books, &c., 43.
Carding engines. *See* Spinning, 28.
Cards. *See* Paper, 12.
Carpets. *See* Weaving, 20.
Carriage lamps. *See* Lamps, 44.
Carriages for guns. *See* Fire-arms, &c., 10.
Carriages for invalids. *See* Medicine, &c., 25.
Carriages, &c., for railways, 46.
Cartridges. *See* Fire-arms, &c., 10.
Cartridges, miner's. *See* Mining, 71.
Cask stands. *See* Casks, 74.
Casks, 74.
Casting metals. *See* Mesalt, &c., 18.
Castors. *See* Furniture, 39.
Cattle medicines. *See* Farriery, &c., 53.
Cement, brush maker's. *See* Brushing, 57.
Centre boards. *See* Steering, 75.
Cesspools. *See* Waterclosets, &c., 63.
Chains (jewellery). *See* Wearing apparel, 68.
Chairs. *See* Furniture, 39.
Chairs, invalid. *See* Medicine, 25; Furniture, 39.
Chamber utensils. *See* Waterclosets &c., 63.
Chandeliers. *See* Lamps, &c., 44.
Cheese making. *See* Milking, &c., 72.
Chemises. *See* Wearing apparel, 66.
Chenille. *See* Lace, &c., 29.
Chess. *See* Toys, 51.
Chimneys and Chimney tops. *See* Fuel, 30.
Chimneys sweeping. *See* Brushing, 57.
Chinaware. *See* Pottery, 24.
Chlorine. *See* Acids, &c., 40.
Chromium. *See* Acids, &c., 40.
Churning. *See* Milking, &c., 72.
Cigars, cigarettes, and cigar holders. *See* Tobacco, 42.
Cinder sifters. *See* Fuel, 30.
Cisterns. *See* Hydraulics, 32.
Citric acid. *See* Acids, 40.
Clasps and clips. *See* Writing, &c., 37.
Clinometers. *See* Optical, &c., 76.
Cloaks. *See* Wearing apparel, 66.
Clocks. *See* Watches, &c., 9.
Clogs. *See* Wearing apparel, 67.
Coal scuttles. *See* Fuel, 30.
Coating metals. *See* Metals, &c., 18 Plating, &c., metals, 23.
Coats. *See* Wearing apparel, 66.
Cobalt. *See* Metals, 18; Acids, &c., 40.
Cocks. *See* Hydraulics, 32.
Coffee Mills. *See* Grinding grain, &c., 78.
Coffer dams. *See* Bridges, 36; Harbours, &c., 77.
Coke ovens. *See* Fuel, 30.
Collars. *See* Wearing apparel, 66.
Collars for horses. *See* Saddlery, 34.
Colours. *See* Paints, 50.
Colours, artists'. *See* Artists instruments, &c., 54.
Combing machines. *See* Spinning, 28.
Commodes. *See* Furniture, 39; Waterclosets, &c., 63.
Compasses, drawing. *See* Optical, &c., 76.
Compasses, magnetic. *See* Electricity, 15; Optical, &c., 76.
Compasses, mariners'. *See* Electricity, 15; Optical, &c., 76.
Concertinas. See Music, &c., 26.

Condensers of steam engines. *See* Steam engine, 49.
Confectionery. *See* Cooking, &c., 61.
Conveying water. *See* Hydraulics, 32.
Cooking, &c., 61.
Copper. *See* Metals, &c., 18.
Copper oxides, &c. *See* Acids, &c., 40.
Copying presses. *See* Writing, &c. 37.
Corkcutting, &c., 56.
Corkscrews. *See* Preparing and cutting cork, 56.
Cornets. *See* Music, 26.
Cots and cradles. *See* Furniture, 39.
Cotton gins. *See* Spinning, 28.
Couches. *See* Furniture, 39.
Couplings for tubes. *See* Metallic pipes, &c., 70.
Crab-winches, steam. *See* Raising, &c., 31; Steam engine, 49.
Cranes. *See* Raising, &c., 31.
Cranes, hydraulic. *See* Raising, &c., 31; Hydraulics, 32.
Cranes, steam. *See* Raising, &c., 31; Steam engine, 49.
Cravats. *See* Wearing apparel, 66.
Crayons. *See* Artists' instruments, &c., 54.
Crayons and crayon holders. *See* Writing, &c., 37; Artists' instruments, &c., 54.
Cricket. *See* Toys, &c., 51.
Crinolines. *See* Wearing apparel, 66.
Crochet needles and holders. *See* Needles, 45.
Croquet. *See* Toys, &c., 51.
Crushing grain, &c. *See* Grinding grain, 78.
Crushing machinery for iron ores. *See* Iron and steel, 6; Metals, &c., 18.
Cuirasses. *See* Fire-arms, &c., 10.
Currycombs. *See* Saddlery, 34.
Curtains. *See* Furniture, 39.
Cyanogen. *See* Acids, &c. 40.

D.

Dams. *See* Harbours, &c., 77.
Dentistry. *See* Medicine, 25.
Derricks. *See* Raising, &c., 31.
Derricks, steam. *See* Raising, &c., 31; Steam engine, 49.
Desks. *See* Writing, 37.
Detonating signals. *See* Railway signals, 38.
Diving apparatus. *See* Raising, &c., 31.
Docks. *See* Harbours, &c., 77.
Dolls. *See* Toys, 51.
Door-springs. *See* Hinges, &c., 59.
Draining mines. *See* Mining, 71.
Drain tiles and pipes. *See* Drains, &c., 1.
Drains and sewers, 1.
Draughts and draughtboards. *See* Toys, 51.
Drawers. *See* Wearing apparel, 66.
Dredgers, steam. *See* Steam engine, *49*; Harbours, &c., 77.
Dredging. *See* Raising, &c., 31; Harbours, &c., 77.
Dress fastenings. *See* Wearing apparel, 68.
Dressing flour and meal. *See* Grinding grain, 78.
Dressing millstones. *See* Grinding grain, 78.
Drums. *See* Music, &c., 26.
Dry docks. *See* Harbours, &c., 77.
Dyeing. *See* Bleaching, &c., 14.
Dynamometers. *See* Optical, &c., 76.

E.

Earrings. *See* Wearing apparel, 68.
Earth closets. *See* Waterclosets, &c. 63.
Earthenware. *See* Pottery, 24.
Easels. *See* Artists' instruments, 54.
Electricity, &c., 15.
Embankments. *See* Harbours, &c., 77.
Embroidering. *See* Sewing, 2.
Endless travelling railways. *See* Aids to locomotion, 7.
Envelopes. *See* Paper, 12; Writing instruments, &c., 37.
Excavating. *See* Harcours, &c., 77.
Exercises. *See* Toys, &c., 51.
Explosive compounds. *See* Fire-arms, &c., 10.
Explosive compounds for blasting. *See* Mining, &c., 71.
Eyelets. *See* Wearing apparel, 68.

F.

Fan blowers. *See* Fuel, 30.
Fans, rotary. *See* Ventilation, 52.
Farriery, &c., 53.
Fats. *See* Oils, &c., 27.
Feeding bottles. *See* Medicine, 25.
Filters, water. *See* Hydraulics, 32; Purifying, &c. water, 79.
Filters, sugar. *See* Sugar, 48.
Fins, steering. *See* Steering, &c., 75.
Fire-arms, &c., 10.
Fire-arms, toy. *See* Toys, 51.
Fire bars. *See* Fuel, &c., 30.
Fire-grates. *See* Fuel, &c., 30.
Fire-proof depositories. *See* Safes, &c., 64.
Fireworks. *See* Toys, 51.
Flageolets. *See* Music, &c., 26.
Flesh brushes. *See* Brushing, 57.
Floating docks. *See* Harbours, &c., 77.
Floorcloth, 80.
Flues. *See* Fuel, 30.
Fluorine. *See* Acids, &c., 40.
Flutes. *See* Music, &c., 26.
Fog signals. *See* Railway signals, 38.
Food, preservation, 4.
Footways. *See* Roads, &c., 35.
Fountains. *See* Hydraulics, 32.
Frills and frillings. *See* Wearing apparel, 66.
Fringe. *See* Lace, &c., 29.
Fruit-cleaning machines. *See* Brushing, 57.

Fruit, machinery for paring, slicing, &c. *See* Cooking, &c., 61.
Fuel, 30.
Furnaces. *See* Iron and steel, 6; Metals and alloys, 18; Fuel, 30; Steam engine, 49.
Furniture, &c., 39.
Fusees and fusee cases. *See* Tobacco, 42.
Fuses for firing blasting charges. *See* Mining, 71.

G.

Gaiters. *See* Wearing apparel, 66.
Galvanic batteries. *See* Electricity, 15.
Games. *See* Toys, 51.
Garters. *See* Wearing apparel, 66.
Gas, 17.
Gas engines. *See* Air, &c., engines, 62.
Gas meters. *See* Gas 17.
Gasometers. *See* Gas, 17.
Gas stoves. *See* Gas, 17; Fuel, &c., 30.
Gas tubes. *See* Metallic pipes, 70.
Gates, dock. *See* Harbours, &c., 77.
Gates, lock. *See* Harbours, &c., 77.
Gauges, air. *See* Ventilation, 52.
Gauges, steam. *See* Steam engine, 49.
Gauges, water. *See* Hydraulics, 32; Steam engine, 49.
Girths. *See* Saddlery, 34.
Globes. *See* Optical, &c., 76.
Globes for lamps. *See* Lamps, 44.
Glove fastenings. *See* Wearing apparel, 68.
Gloves. *See* Wearing apparel, 66.
Gold. *See* Metals, &c., 18; Acids, &c., 40.
Goloshes. *See* Wearing apparel, 67.
Graphometers. *See* Optical, &c., 76.
Grates. *See* Fuel, &c., 30.
Graving docks. *See* Harbours, &c., 77.
Gridirons for repairing ships. *See* Harbours, &c., 77.
Grinding grain, 78.
Grooming horses by machinery. *See* Brushing, 57.
Guitars. *See* Music, &c., 26.
Gunboats. *See* Ship-building, 21.
Gunpowder. *See* Fire-arms, 10.
Gutta-percha. *See* India-rubber, 16.
Gutters. *See* Drains, 1; Roads, 35.
Gymnastics. *See* Medicine, &c., 25; Toys, 51.

H.

Habits. *See* Wearing apparel, 66.
Hair-brushing machinery. *See* Brushing, 57.
Hair cloth. *See* Weaving, 20.
Hair pins. *See* Needles, &c., 45.
Hammers, steam. *See* Iron and steel, 6; Steam engine, 49.
Hammocks. *See* Furniture, 39.
Harbours, &c., 77.
Harmoniums. *See* Music, &c., 26.
Harness. *See* Saddlery, 34.
Harps and harpsichords. *See* Music, &c., 26.
Hassocks. *See* Furniture, 39.
Hats, hat bands, and hat boxes. *See* Wearing apparel, 65.
Head coverings. *See* Wearing apparel, 65.
Heckling machines. *See* Spinning, 28.
Heliography. *See* Photography, 19.
Helmets. *See* Fire-arms, &c., 10; Wearing apparel, 65.
Hides. *See* Skins, 55.
Hinges and hinge joints, 59.
Hoists. *See* Raising, &c., 31.
Hoists, steam. *See* Raising, &c., 31; Steam-engine, 49.
Hooks and eyes. *See* Wearing apparel, 68.
Horns. *See* Music, &c., 26.
Horse medicines. *See* Farriery, 53.
Horse shoes. *See* Farriery, 53.
Hosiery. *See* Wearing apparel, 66.
Hospitals. *See* Medicine, &c., 25.
Hulling, &c., grain. *See* Grinding grain, 78.
Hydrants. *See* Hydraulics, 32.
Hydraulics, 32.
Hydrochloric acid. *See* Acids, 40.
Hydrocyanic acid. *See* Acids, 40.
Hydrogen. *See* Acids, &c., 40.
Hydro-propulsion. *See* Marine propulsion, 5,
Hygrometers. *See* Optical, &c., 76.

I.

India-rubber, 16.
India-rubber horse-shoes. *See* Farriery, 53.
Ink and inkstands. *See* Writing, &c., 37.
Insulators. *See* Electricity, 15.
Invalid bedsteads. *See* Medicine, &c., 25; Furniture, 39.
Iodine. *See* Acids, &c., 40.
Iron and steel, 6.
Iron oxides, &c. *See* Acids, &c., 40.

J.

Jackets. *See* Wearing apparel, 66.
Jacks, hydraulic. *See* Hydraulics, 32.
Jacks, roasting. *See* Cooking, 61.
Jacks, screw. *See* Raising, &c., 31.
Jacquard machines. *See* Weaving, 20; Lace, 29;
Jewellery. *See* Wearing Apparel, 68.

K.

Kaleidoscopes. *See* Optical, &c., 76.
Kamptulicon. *See* Artificial leather, &c., 80.
Keels, sliding. *See* Steering, 75.
Kegs. *See* Casks, 74.
Kilns. *See* Bricks and tiles, 22; Pottery, 24; Fuel, 30.
Kites. *See* Aeronautics, 41; Toys, 51.
Knapsacks. *See* Fire-arms, &c., 10.
Kneading machines. *See* Cooking, &c. 61.

Knife cleaners. *See* Brushing, 57.
Knitting machines. *See* Lace, 29.
Knobs. *See* Furniture, &c., 39; Locks, 69.

L.

Labels. *See* Writing, &c., 37.
Lace, &c., 29.
Lampblack. *See* Paints, 50.
Lamps, &c., 44.
Lamps, cooking. *See* Lamps, 44; Cooking, 61.
Lasts for making boots and shoes. *See* Wearing apparel, 67.
Latches. *See* Locks, &c., 60.
Launching vessels. *See* Ship-building, 21.
Lead. *See* Metals, &c., 18.
Lead for paints. *See* Paints, 50.
Lead, oxides, &c. *See* Acids, &c., 40.
Leather. *See* Skins, &c., 55.
Leather cloth. *See* Artificial leather, 80.
Lee boards. *See* Steering, &c., 75.
Leggings. *See* Wearing apparel, 66.
Lenses. *See* Optical, &c., 76.
Levels. *See* Optical, &c., 76.
Lifts. *See* Raising, 31.
Lifts, steam. *See* Raising, 31; Steam engine, 49.
Lighthouse lamps. *See* Lamps, 44.
Lighthouses. *See* Harbours, &c., 77.
Lighting mines. *See* Mining, 71.
Limbs, artificial. *See* Medicine, &c., 25.
Lime. *See* Acids, &c. 40.
Lime light. *See* Lamps, &c., 44.
Linoleum. *See* Artificial leather, &c., 80.
Lockets. *See* Wearing apparel, 68.
Locks, &c., 60.
Locks, canal, &c. *See* Harbours, &c., 77.
Locks for guns. *See* Fire-arms, 10.
Locomotion, aids to, 7.
Locomotive steam carriages. *See* Steam engine, 49.
Logs. *See* Optical, &c., 76.
Looking-glasses. *See* Furniture, 39.
Looms. *See* Weaving, 20.
Lowering apparatus. *See* Raising, &c., 31.
Lozenges. *See* Medicine, 25; Cooking, 61.
Lubricants. *See* Oils, &c., 27.

M.

Machine needles. *See* Needles, 45.
Magic lanterns. *See* Toys, 51.
Magnesia. *See* Acids, &c., 40.
Magnesium. *See* Acids, &c., 40.
Magnetism. *See* Electricity, 15.
Malt mills. *See* Grinding grain, 78.
Manganese. *See* Acids, &c., 40.
Mangers. *See* Saddlery, &c., 34.
Mangling machines. *See* Bleaching, &c., 14.
Manifold writers. *See* Writing, 37.
Manœuvring ships and vessels. *See* Steering, &c., 75.
Mantillas and mantles. *See* Wearing apparel, 66.
Manure, 3.
Marine engines. *See* Marine propulsion, 5; Steam engine, 49.
Marine propulsion, 5.
Mariners' compasses. *See* Electricity, 15.
Masts, &c., 73.
Mathematical instruments. *See* Artists' instruments; 54; Optical, &c., 76.
Mattresses. *See* Furniture, 39.
Meat screens. *See* Cooking, 61.
Medicine, &c., 25.
Medicine, horse and cattle. *See* Farriery, 53.
Memorandum books. *See* Books, 43.
Mercury. *See* Acids, &c., 40.
Metals and alloys, 18.
Metals, plating, &c., 23.
Metals, separating. *See* Metals, &c., 18.
Meteorological instruments. *See* Optical, &c., 76.
Meters, gas. *See* Gas, 17.
Meters, water. *See* Hydraulics, 32.
Micrometers. *See* Optical, &c., 76.
Microscopes. *See* Optical, &c., 76.
Milking, &c., 72.
Millboard. *See* Paper, 11.
Mills, barley. *See* Grinding grain, 78.
Mills, coffee. *See* Grinding grain, 78.
Mills, flour. *See* Grinding grain, 78.
Mills malt. *See* Grinding grain, 78.
Mills, paint. *See* Paints, 50.
Mills, sugar. *See* Sugar, 48.
Mills, water. *See* Hydraulics, 32; Grinding grain, 78.
Millstones. *See* Grinding grain, 78.
Millstones, balancing. *See* Grinding grain, 78.
Millstones, dressing, &c. *See* Grinding grain, 78.
Mincing machines. *See* Cooking, 61.
Miners' lamps. *See* Lamps. 44.
Mines, ventilating. *See* Ventilation,
Mining, &c., 71.
Mittens. *See* Wearing apparel, 66.
Motive power. *See* Hydraulics, 32; Steam engine, 49; Air and gas engines, 62.
Moulds, sugar. *See* Sugar, 48.
Muffs. *See* Wearing apparel, 66.
Mules. *See* Spinning, 28.
Muriatic acid. *See* Acids, 40.
Music and musical instruments, 26.
Music stands. *See* Music, &c., 26.

N.

Nails, &c., 58.
Nails, horse-shoe. *See* Farriery, 53; Nails, 58.
Nautical instruments. *See* Optical, &c., 76.
Necklaces and necklets. *See* Wearing apparel, 68.
Neckties. See Wearing apparel, 66.

Needle cases. *See* Sewing, 2.
Needles and pins, 45.
Netting. *See* Lace, &c., 29.
Nickel. *See* Metals, &c., 18; Acids, &c., 40.
Nitre. *See* Acids, &c., 40.
Nitric acid. *See* Acids, 40.
Nitrogen. *See* Acids, &c. 40.
Nosebags. *See* Saddlery, 34.
Nuts. *See* Nails, &c., 58.

O.

Oars. *See* Marine propulsion, 5.
Octants. *See* Optical, &c., 76.
Oilcloth, 80.
Oils, &c., 27.
Oilskin, 80.
Optical, &c., instruments, 76.
Ordnance. *See* Fire-arms, 10.
Organs. *See* Music, &c., 26.
Ovens. *See* Fuel, 30.
Ovens, bakers'. *See* Fuel, 30; Cooking, 61.
Overalls. *See* Wearing apparel, 66.
Overcoats. *See* Wearing apparel, 66.
Overshoes. *See* Wearing apparel, 67.
Oxalic acid. *See* Acids, 40.
Oxides. *See* Acids, &c., 40.
Oxygen. *See* Acids, &c., 40.

P.

Packing for pistons of steam engines. *See* Steam engine, 49.
Paddle-wheels. *See* Marine propulsion, 5.
Paints, &c., 50.
Paints for artists. *See* Artists' instruments, &c., 54.
Pantaloons. *See* Wearing apparel, 66.
Paper, 11, 12.
Paperhangings. *See* Paper, 12; Printing, 13.
Papier maché. *See* Paper 11.
Parachutes. *See* Aeronautics, 41.
Parasols. *See* Umbrellas, 47.
Pasteboard. *See* Paper, 11, 12.
Pattens. *See* Wearing apparel, 67.
Paving. *See* Roads, 35.
Peat. *See* Fuel, 30.
Pedometers. *See* Optical, &c., 76.
Pencil cases and holders. *See* Writing, &c., 37; Artists' instruments, 54.
Pencil cases, boxes to hold leads for. *See* Writing, &c., 37.
Pens and penholders. *See* Writing, &c., 37; Artists' instruments, 54.
Pens, boxes for holding. *See* Writing, &c. 37.
Pepper, hulling. *See* Grinding grain, 78.
Perpetual motion. *See* Hydraulics, 32; Air, &c., engines, 62.
Petticoats. *See* Wearing apparel, 66.
Phenakistoscopes. *See* Photography, 19, Optical, &c. 76.
Phenic acid. *See* Acids, 40.
Philosophical instruments. *See* Optical, &c., 76.
Phosphoric acid. *See* Acids, 40.
Phosphorus. *See* Acids, &c., 40.
Photography, 19.
Pianofortes. *See* Music, &c., 26.
Picture frames. *See* Furniture, 39.
Piers. *See* Harbours, &c., 77.
Pile drivers, steam. *See* Steam engine, 49; Harbours, &c., 77.
Piles. *See* Harbours, &c., 77.
Pins. *See* Needles, &c., 45.
Pipes. *See* Tobacco, 42.
Pipes, drain. *See* Drains, 1.
Pipes, metallic. *See* Metallic pipes, 70.
Pistols. *See* Fire-arms, 10.
Pistons of steam engines. *See* Steam engine, 49.
Pit chains. *See* Mining, &c., 71.
Plaiting. *See* Lace, &c., 29
Plating metals, 23.
Playing cards, *See* Toys, 51.
Plumb levels. *See* Optical, &c., 76.
Pocket books. *See* Books, 43.
Porcelain. *See* Pottery, 24.
Portfolios. *See* Books, 43.
Portfolios for music. *See* Music, 26.
Potash. *See* Acids, &c., 40.
Potassium. *See* Acids, &c., 40.
Pottery, 24.
Pouches for tobacco. *See* Tobacco, 42.
Powder flasks. *See* Fire-arms, &c., 10.
Power looms. *See* Weaving, 20.
Precious stones, cutting, &c. *See* Wearing apparel, 68.
Precious stones, setting. *See* Wearing apparel, 68.
Presses, hydraulic. *See* Hydraulics, 32.
Printing fabrics, yarns, &c. *See* Bleaching, &c., 14.
Printing, typographic, &c., 13.
Projectiles. *See* Fire-arms, &c., 10.
Propellers. *See* Marine propulsion, 5.
Propulsion, marine, 5.
Prussic acid. *See* Acids, 40.
Puddling furnaces. *See* Iron and steel, 6; Fuel, 30.
Pug mills. *See* Bricks and tiles, 22.
Pulleys. *See* Raising, &c., 31.
Pumps. *See* Hydraulics, 32.
Pumps, steam. *See* Hydraulics, 32; Steam engine, 49.
Punkas. *See* Ventilation, 52.
Purifying water. *See* Hydraulics, 32; Purifying and filtering water, 79.
Pyrometers. *See* Optical, &c., 76.

Q.

Quadrants. *See* Optical, &c., 76.
Quarrying. *See* Mining, &c., 71.
Quays. *See* Harbours, &c., 77.
Quinine. *See* Acids, &c., 40.

R.

Rafts. *See* Ship-building, 21.
Railway carriages. *See* Carriages, &c., for railways, 46.
Railway signals, &c., 38.

Railways, 33.
Raising, &c., 31.
Raising and lowering ships' boats. *See* Raising, &c., 31; Masts, &c., 73.
Raising ships for repairing. *See* Ship-building, &c., 21.
Raising water. *See* Hydraulics, 32.
Ranges, cooking. *See* Fuel, 30; Cooking, 61.
Reflectors. *See* Lamps, 44.
Reservoirs. *See* Harbours, &c., 77.
Respirators. *See* Medicine, &c., 25.
Retorts, sugar. *See* Sugar, 48.
Reverberatory furnaces. *See* Iron and steel, 6; Fuel, 30.
Rice, hulling, &c. *See* Grinding grain, 78.
Rick covers. *See* Artificial leather, &c., 80.
Rigging. *See* Masts, &c., 73.
Rings, finger, &c. *See* Wearing apparel, 68.
Rivets. *See* Nails, &c., 58.
Road sweepers. *See* Brushing, 57.
Roads and ways, 35.
Roasting jacks. *See* Cooking, 61.
Rockets. *See* Fire-arms, &c., 10.
Rocking chairs and horses. *See* Toys, 51.
Rollers for roads. *See* Roads, &c., 35.
Ropes and bands for mines. *See* Mining, 71.
Roughing horses. *See* Farriery, 53.
Rudders. *See* Steering, 75.
Ruffles and ruffs. *See* Wearing apparel, 66.
Rulers and ruling machines. *See* Writing, 37; Artists' instruments, 54.

S.

Sacks. *See* Weaving, 20.
Saddlery, &c., 34.
Safes, &c., 64.
Safety lamps. *See* Lamps, 44.
Safety pockets. *See* Wearing apparel, 68.
Safety valves of steam boilers. *See* Steam engine, 49.
Sails. *See* Masts, &c., 73.
Salt, common. *See* Acids, &c., 40.
Saltpetre. *See* Acids, &c., 40.
Salts. *See* Acids, &c., 40.
Salt water obtaining fresh water from. *See* Purifying &c., water, 79.
Scales. *See* Raising, &c., 31
Screens. *See* Furniture, 39.
Screw propellers for carriages and agricultural implements. *See* Aids to locomotion, 7.
Screw propellers for ships. *See* Marine propulsion, 5.
Screws. *See* Nails, &c., 58.
Sealing wax. *See* Writing, &c., 37.
Sea walls. *See* Harbours, &c., 77.
Semaphore signals. *See* Railway signals, 38
Sewers. *See* Drains, &c., 1.
Sewers, ventilating. *See* Ventilation, 52.
Sewing, &c., 2.
Sextants. *See* Optical, &c., 76.
Shades. *See* Lamps, 44.
Shakos. *See* Fire-arms, &c., 10; Wearing apparel, 65.
Shaving brushes. *See* Brushing, 57.
Shawl pins. *See* Wearing apparel, 68.
Shawls. *See* Wearing apparel, 66.
Shawls, weaving. *See* Weaving, 20.
Shear legs. *See* Raising, &c., 31.
Sheathing metals. *See* Metals, &c, 18.
Sheep wash. *See* Farriery, &c., 53.
Ship-building, &c., 21.
Ship lamps and lanterns. *See* Lamps, 44.
Ships, steering and manœuvring. *See* Steering, 75.
Ships, ventilating. *See* Ventilation, 52.
Shirts. *See* Wearing Apparel, 66.
Shoes. *See* Wearing apparel, 67.
Signal lamps. *See* Lamps, 44.
Signals. *See* Electricity, 15; Railway signals, 38.
Silicic acid. *See* Acids, 40.
Silver. *See* Metals, &c., 18; Acids, 40.
Siphons. *See* Hydraulics, 32; Preparing, &c., cork, 56.
Sizing machines. *See* Weaving, 20.
Skates. *See* Toys, 51.
Skins, &c., 55.
Skirts. *See* Wearing apparel, 66.
Sleeve links. *See* Wearing apparel, 68.
Slide rules. *See* Optical, &c., 76.
Slippers. *See* Wearing apparel, 67.
Slips. *See* Harbours, &c., 77.
Sluices. *See* Harbours, &c., 77.
Smelting furnaces. *See* Iron and steel, 6; Metals, &c., 18; Fuel, 30.
Snuff and snuff boxes. *See* Tobacco, 42.
Soap. *See* Oils, &c., 27.
Socks. *See* Wearing apparel, 66.
Soda. *See* Bleaching, 14; Acids, &c., 40.
Sodium. *See* Acids, &c., 40.
Solitaries. *See* Wearing apparel, 68.
Sounding apparatus. *See* Optical, &c., 76.
Spectacles. *See* Optical, &c., 76.
Spectroscopes. *See* Optical, &c., 76.
Spinning, 28.
Spirit levels. *See* Optical, &c., 76.
Spittoons. *See* Tobacco, &c., 42.
Spring balances. *See* Raising, &c., 31.
Springs for railway carriages. *See* Carriages, &c., for railways, 46.
Spurs. *See* Saddlery, &c., 34.
Stable brushes. *See* Brushing, 57.
Stable fittings. *See* Saddlery, &c., 34.
Stands for casks. *See* Casks, 74.
Stands for music. *See* Music, &c., 26.
Stannates. *See* Acids, &c., 40.
Stationery. *See* Paper, 11, 12; Writing, &c., 37.
Staves, cutting, shaping, &c. *See* Casks, 74.
Stay fastenings. *See* Wearing apparel, 68.
Stays. *See* Wearing apparel, 66.
Steam boilers. *See* Steam engine, 49.
Steam culture, 8.

Steam engine, 49.
Steam gauges. *See* Steam engine, 49.
Steam rams. *See* Ship-building, 21.
Steel. *See* Iron, &c., 6.
Steelyards. *See* Raising, &c., 31.
Steering ships and vessels, 75.
Stereoscopes. *See* Photography, 19.
Stirrups. *See* Saddlery, &c., 34.
Stocking fabrics. *See* Lace, &c., 29.
Stockings. *See* Wearing apparel, 66.
Stockings, elastic. *See* Medicine, &c., 25.
Stone breakers. *See* Roads, 35.
Stoneware. *See* Pottery, 24.
Stools, music. *See* Music, 26.
Stoppers. *See* Preparing, &c., cork, 56.
Stoves. *See* Fuel, 30.
Strong rooms. *See* Safes, &c., 64.
Strontia. *See* Acids, &c., 40.
Strontium. *See* Acids, &c., 40.
Studs. *See* Wearing Apparel, 68.
Submarine cables. *See* Electricity, &c., 15.
Sugar, 48.
Sulphur and sulphuric acid. *See* Acids, &c., 40.
Sun dials. *See* Optical, &c., 76.
Surgery. *See* Medicine, &c., 25.
Surgical instruments. *See* Medicine, &c., 25.
Surveying instruments. *See* Optical, &c., 76.
Suspension bridges. *See* Bridges, 36.
Sweeping. *See* Brushing, &c., 57.
Sweeping chimneys. *See* Fuel, 30.
Sweeping roads. *See* Roads, &c., 35.
Swings. *See* Toys, 51.
Swivels and swivel rings. *See* Wearing apparel, 68.
Swords. *See* Fire-arms, &c., 10.
Syringes. *See* Hydraulics, 32.
Syringes, surgical. *See* Medicine, &c., 25.

T.

Tables. *See* Furniture, 39.
Tags for laces. *See* Wearing apparel, 68.
Tailors' irons. *See* Wearing apparel, 66.
Tannic acid. *See* Acids, 40.
Tanning leather. *See* Skins, 55.
Targets. *See* Fire-arms, &c., 10.
Tarpaulin. *See* Artificial leather, &c., 80.
Tartaric acid. *See* Acids, 40.
Teeth, artificial. *See* Medicine, &c., 25.
Telegraphs, electric. *See* Electricity, 15.
Telescopes. *See* Optical, &c., 76.
Tent covers. *See* Artificial leather, &c., 80.
Theodolites. *See* Optical, &c., 76.
Thermometers. *See* Optical, &c., 76.
Thimbles. *See* Sewing, 2.
Throstles. *See* Spinning, 28.
Tiles. *See* Drains, &c., 1; Bricks, &c., 22.
Tills. *See* Safes, &c., 64.
Tin. *See* Metals, &c., 18; Acids, &c., 40.
Tinning. *See* Plating or coating Metals, 23.
Tips, boot and shoe. *See* Wearing apparel, 67.
Tobacco, 42.
Tooth brushes. *See* Brushing, 57.
Tops. *See* Toys, 51.
Torpedoes. *See* Ship-building, 21.
Toys, &c., 51.
Tracing cloth and paper. *See* Artists' instruments, &c., 54.
Traction engines. *See* Steam engine, 49.
Trees, boot and shoe. *See* Wearing apparel, 67.
Trimmings. *See* Lace, 29.
Trousers. *See* Wearing apparel, 66.
Trouser strap fastenings. *See* Wearing apparel, 68.
Tube brushes. *See* Brushing, 57.
Tungstic acid. *See* Acids, 40.
Tunnelling. *See* Mining, &c., 71.
Turbines. *See* Hydraulics, 32.
Tuyere. *See* Fuel, 30.

U.

Umbrellas, &c., 47.
Unions for tubes. *See* Metallic pipes, 70.
Upholstery. *See* Furniture, 39.
Urinals. *See* Waterclosets, &c., 63.

V.

Vacuum pans for sugar. *See* Sugar, 48.
Valves, air. *See* Ventilation, 52.
Valves gas. *See* Gas, 17.
Valves, steam. *See* Steam engine, 49.
Valves, water. *See* Hydraulics, 32.
Valves, watercloset. *See* Waterclosets, 63.
Varnish, boot and shoe. *See* Wearing apparel, 67.
Varnishes. *See* Paints, &c., 50.
Vehicles, ventilating. *See* Ventilation, 52.
Vent pegs and spiles. *See* Preparing and cutting cork, &c., 56.
Ventilating mines. *See* Ventilation, 52; Mining, 71.
Ventilating railway carriages. *See* Carriages, &c., for railways, 46; Ventilation, 52.
Ventilation, 52.
Veterinary art. *See* Farriery, 53.
Viaducts. *See* Bridges, &c., 36.
Vinegar. *See* Acids, &c., 40.
Violins. *See* Music, &c., 26.
Vitriol. *See* Acids, &c., 40.

W.

Wafers. *See* Writing, &c., 37.
Waggon covers. *See* Artificial leather, &c., 80.
Waggons, railway. *See* Carriages, &c., for railways, 46.

Waistcoats. *See* Wearing apparel, 66.
Walking-sticks. *See* Umbrellas, &c., 47.
Wardrobes. *See* Furniture, 39.
Washing and sifting ores. *See* Metals, &c., 18.
Washing machines. *See* Bleaching, &c., 14.
Watches, &c., 9.
Watch protectors. *See* Wearing apparel, 68.
Water aerating. *See* Purifying, &c. water, 79.
Water, chemical treatment of. *See* Purifying &c., water, 79.
Waterclosets, &c., 63.
Watercourses. *See* Harbours, &c., 77.
Watering roads. *See* Roads, 35.
Water meters. *See* Hydraulics, 32.
Waterproof fabrics, 80.
Waterproofing leather. *See* Skins, &c., 55.
Water, purifying and filtering. *See* Purifying, &c., water, 79.
Wearing apparel,—body coverings, 66.
Wearing apparel,—foot coverings, 67.
Wearing apparel,—head coverings, 65.
Weaving, 20.
Weighing. *See* Raising, &c., 31.
Well-sinking. *See* Mining, &c., 71.
Wet docks. *See* Harbours, &c., 77.
Wharves. *See* Harbours, &c., 77.
Wheels, railway. *See* Carriages, &c., for railways, 46.
Whips and whip sockets. *See* Saddlery, &c., 34.
Whistles. *See* Railway signals, 38.
Wicks. *See* Lamps, &c., 44.
Winding drums for mines. *See* Raising, 31; Mining, 71.
Windlasses. *See* Raising, &c., 31.
Windlasses, steam. *See* Raising, 31; Steam engine, 49.
Windmills. *See* Air, &c., engines, 62.
Windmills used to propel ships. *See* Marine Propulsion, 5; Masts, &c. 73.
Window fastenings. *See* Locks, &c., 60.
Wire brushes. *See* Brushing, 57.
Wood paving. *See* Roads, 35.
Wringing machines. *See* Bleaching, 14.
Wristbands. *See* Wearing apparel, 66.
Writing instruments, &c., 37.

Z.

Zinc. *See* Metals, &c., 18.
Zinc for paint. *See* Paints, 50.
Zinc oxides, &c. *See* Acids, &c., 40.

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